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PHYSIOLOGIC STANDARDS IN GASTRO-ENTEROLOGY *

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Recent advances in the physiology of digestion, particularly the work of Cannon,[1] Carlson [2] and Alvarez,[3] add emphasis to the rôle that motor disturbances play in the production of gastro-intestinal symptomatology. Only a few years ago we were primarily concerned about secretory changes, and fine distinctions were drawn in regard to the variations in gastric acidity. Rehfuss and Hawk [4] have shown that the highest degree of acidity occurs in healthy young subjects. Finally the researches of Johnson and Hurst,[5] confirmed by Carlson and others, demonstrated that the mucosa of the gastro-intestinal tract (except the anal canal) was devoid of pain nerve endings. Thus it appears that the terms hyperacidity, hyperesthesia gastrica and gastralgia are destined to be relegated to the junk heap of medical history.

Most investigators agree with Carlson that the pain in gastric and duodenal ulcer is largely, if not entirely, due to motor phenomena. The pain of intestinal colic is evidently produced by spasmodic contractions of the intestinal wall. As Carlson [6] summarizes, "All gastro-intestinal pains of definite peripheral origin are essentially contraction pains." Cannon,[7] as well as Meltzer,[8] has shown that the gastro-intestinal movements occur in a definite, orderly fashion. The work of Alvarez [9] reveals a gradient of irritability from cardia to pylorus. He suggests that the entire gastro-intestinal tube may have been originally so constructed that the rhythmicity of any one segment varied inversely as the distance from the pharynx. We are therefore justified in visualizing the gastro-intestinal tract as a beautiful mechanism whose motor apparatus functions in a rhythmic, orderly fashion, concomitant with appropriate, specific chemical changes.

With such a physiologic ideal before us, let us briefly review some of the deviations from the normal that present themselves in the gastro-enterologic clinic. The dyspepsia syndrome (belching, heartburn and vomiting) is obviously due to motor disturbances. We are indebted to Alvarez [10] for the rational explanation of the nature of the disturbed motor processes. The foregoing symptoms plus nausea and anorexia form a group that we recognize under the generic term dyspepsia, which may be caused by gallbladder and appendix disease and cardiac and renal diseases, as well as by primary disturbances in the nervous system. We must determine whether the inhibiting factor originates primarily in the nervous system or in some diseased organ remote from the stomach. "The monkey wrench in the works" may come from widely different sources.

In a type of dyspepsia occurring in sensitive persons who are free from organic disease and whose gastro-intestinal mechanism is unimpaired, the patients develop a habit of belching; they are continually trying to get the "gas off their stomachs." The delicate mechanism of the cardia is thus upset, acid regurgitates into the esophagus, and heartburn results; regurgitation of food and vomiting may occur. We must convince such patients, as well as ourselves, that they are free from organic disease and that their digestive powers are good. They should be taught that belching is a bad habit which should be brought under control of the will, as it interrupts the orderly gastric movements; that gas is a natural product of digestion and must be let alone.

Physicians know the derangements of the digestive function which are produced by strong emotions. Mills [11] has repeatedly observed a high grade transient stasis occurring in patients with unimpaired gastro-intestinal motility during an attack of migraine. I have frequently noted the most severe forms of gastro-intestinal stasis in patients exhibiting the periodic form of manic-depressive insanity. In the time intervening between the attacks, a complete restoration to normal motor function occurs. In severe cases of this form of psychosis, the motor changes are so great that they are often mistaken for the cause of the mental disturbance instead of the result; in fact, many of these patients have been subjected to ill-advised gastro-intestinal surgical procedures in a misguided effort to cure the psychosis. Patients suffering from milder psychoses often present a baffling group of gastro-intestinal symptoms. This group is also particularly likely to show associated endocrine disorders. Careful analysis of the subjective symptoms will usually establish the diagnosis.

* Chairman's address, read before the Section on Gastro-Enterology and Proctology at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

1. Cannon, W. B.: The Mechanical Factors of Digestion, London, 1911.
2. Carlson, A. J.: Tr. Am. Gastro-Enterol. A., 1911.
3. Alvarez, W. C.: The Motor Functions of the Intestine from a New Point of View, J. A. M. A. **65**: 388 (July 31) 1915.
4. Rehfuss and Hawk: Tr. Am. Gastro-Enterol. A., 1919, p. 62.
5. Johnson and Hurst: Goulstonian Lectures on the Sensibility of the Alimentary Canal, Oxford, 1910.
6. Carlson, A. J.: Tr. Am. Gastro-Enterol. A., 1911, p. 227.
7. Cannon, W. B.: The Importance of Tonus for the Movements of the Alimentary Canal, Arch. Int. Med. **8**: 421 (Oct.) 1911.
8. Meltzer, S. J.: The Relation of the Purgative Action of Magnesium Sulphate to Peristalsis, and the General Law of Crossed Innervation, Arch. Int. Med. **15**: 955 (June) 1915.
9. Alvarez, W. C.: Tr. Am. Gastro-Enterol. A., 1919; p. 46.
10. Alvarez, W. C.: Reverse Peristalsis, J. A. M. A. **69**: 2018 (Dec. 15) 1917.
11. Mills, R. W.: Tr. Am. Gastro-Enterol. A., 1918, p. 43.

The disturbances in colonic motility are of special interest. Hurst [12] fixes a physiologic standard for normal defecation, asserting that the colon in normal, healthy young adults should be emptied from the splenic flexure to the anus. The work of Hurst and W. J. Mayo [13] on the anatomy and physiology of the rectosigmoid apparatus discloses a definite mechanism comparable to the ileocecal valve and cardia. They demonstrate that the column of fecal matter is held at the rectosigmoid angle until the time for defecation occurs. Under normal conditions the rectum is free from fecal matter except during the act of defecation.

Using the foregoing standards, I [14] reported a large percentage of patients who presented themselves for treatment for constipation, who in reality exhibited no colonic stasis but were suffering from the effects of the habitual use of cathartics and enemas. To restore normal function in these patients it was necessary only to permit the intact colonic mechanism to perform its work unimpeded by drugs or enemas.

When one opens the lower colon of any healthy vertebrate, including man, one will find formed, desiccated fecal matter. It is obvious that restoration of function cannot consist in changing the contents from a dry to a liquid state by the habitual use of drugs and enemas. Unfortunately, a large number of physicians are still obsessed with the notion that the human colon is a sewer that should be kept continuously "flushed out." Carlson [15] says, "Auerbach's plexus is the brain of the intestine." It is a brain much older and better organized than that of man, who lightly attempts to interfere with a biologic function established in all forms of life throughout the ages. Abdominal or colonic massage is absurd. Who has the presumption to state at what time the intestinal contents should move forward? It is our duty to attempt restoration of normal rhythm instead of using methods that tend toward further disorganization. In pathologic conditions, such as angulations, adhesions and colonic redundancies, the intestine, though crippled, will continue its intelligent efforts to function. The wonderful adaptability of the intestine is well demonstrated in the gross anatomic changes produced by tuberculosis and new growths.

A clear concept of physiologic standards will aid in diagnosis and simplify therapy. Deviations from the normal may often be corrected by dietetic and hygienic measures. At the same time, we as physicians should hold fast to our dearly purchased surgical concepts, such as gallbladder disease, appendicitis and obstructing ulcer. It is appalling to contemplate the tons of pepsin consumed annually by persons whose stomachs are free from any secretory abnormality, as well as the carloads of cathartic pills swallowed by patients with intact enterocolonic mechanisms. Let us plead, then, for the recognition of physiologic gastrointestinal standards and the application of the standards in our diagnostic and therapeutic work.

4731 Westminster Place.

12. Hurst, A. F.: Constipation and Allied Intestinal Disorders, Oxford, 1919.
13. Mayo, W. J.: Surg., Gynec. & Obst. **25**:616 (Dec.) 1917.
14. Soper, H. W.: Med. Clin. N. America **4**:901 (Nov.) 1920.
15. Carlson, A. J.: Tr. Am. Gastro-Enterol. A., 1911, p. 217.

Tuberculosis.—If an accurate general census could be made of all persons, regardless of the state of their health, approximately one in five, or 20 per cent., should give a history of tuberculosis in at least one parent, since about one person in ten dies of the disease.—*J. Lab. and Clin. Med.*, February, 1922.

THE PRESENT STATUS OF THE USE OF DRUGS IN HEART DISEASE

WITH ESPECIAL REFERENCE TO DIGITALIS AND QUINIDIN *

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The discussion of the present status of the use of drugs in heart disease will perforce deal primarily with digitalis and quinidin, the two most important. Other drugs are, to be sure, quite rightly used in heart disease, but they may be touched on more briefly at the outset. Still other drugs are probably wrongly used, and of these there is little time to speak.

DRUGS USEFUL IN PREVENTING OR ARRESTING HEART DISEASE

The first group of drugs to be mentioned is that which comprises medicines used to treat the causes of heart disease. Mercury, potassium iodid and arsphenamin are indicated for syphilis whether or not the heart and vessels are demonstrably involved. By the early and thorough treatment of syphilis, probably much heart disease can be prevented.

Another and even more important cause of heart disease is rheumatic fever. The sufficient use of salicylates in combating rheumatic fever cannot be overemphasized, for it is likely that, with early control of the infection, considerable heart trouble in young persons may be prevented. Even with actual rheumatic heart disease already present, further attacks of rheumatic fever should be quenched, as is often possible, by saturation with salicylates. In this way increase in the degree of heart damage may be avoided.

There is a rumor widespread in the community, among physicians as well as among laymen, that acetylsalicylic acid and some other salicylate preparations are bad for the heart. I think that the rumor is unfounded and perhaps is responsible itself for some heart trouble through the failure to administer salicylates, when rheumatic fever is present, just because heart lesions are found. I have administered as much as 200 or 300 grains of salicylates in the course of a few days when indicated, and with striking relief, to combat rheumatic fever in patients with heart disease. It rarely is necessary to give so much; rapid saturation and maintenance of saturation by small doses frequently suffice.

Of course there are toxic symptoms—tinnitus, dizziness, headache and nausea from salicylate saturation—but these are not cardiac symptoms. Unfortunately, in acute or subacute endocarditis, of rheumatic or other origin, in which joint or muscle pains are absent, salicylates are often, and perhaps usually, ineffective. The same holds true of chorea.

St. Lawrence's work [1] on potential heart disease is confirmatory of this situation so far as his few statistics go. In the course of more than four years, a considerable percentage of the children with chorea developed demonstrable heart lesions, while none of the children with rheumatic fever developed heart lesions. Although these figures doubtless cannot be

* From the Massachusetts General Hospital.
* Read before the Section on Pharmacology and Therapeutics at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

1. St. Lawrence, William: Effect of Tonsillectomy on Recurrence of Acute Rheumatic Fever and Chorea, J. A. M. A. **75**:1035 (Oct. 16) 1920.

taken as representative of the exact situation, nevertheless they are very illuminating. We can obviously treat rheumatic fever better than we can treat chorea. In addition to salicylate therapy, we must not forget the undoubted value of tonsillectomy in the prevention of further rheumatic involvement.

In the battle against the insidious and very serious condition called subacute bacterial, or malignant, endocarditis, we are well-nigh helpless. All manner of drugs have been tried and abandoned, and nursing care with symptomatic therapy has been resorted to at the last. However, arsenic offers possible promise. It has been used with uncertain success, but the recent report by Dr. Capps [2] of eight cases, all with positive blood cultures, treated by subcutaneous injections of sodium cacodylate daily for weeks with four recoveries, is most encouraging. The series, however, is too small to afford us more than hopeful promise. The work with this drug should be followed up more extensively.

Other types of heart disease, arteriosclerotic, thyroid, hypertensive and congenital, cannot be combated primarily by drug therapy. The use of potassium iodid in the treatment of arteriosclerosis still rests on an empiric basis. Perhaps it is of some value, but there is little proof of its value as yet.

In definite hyperthyroidism, treatment by roentgen ray or operation, or both, probably averts a considerable amount of myocardial damage. Possibly in some mild cases, quinin hydrobromid and rest may suffice.

In the cardiac sluggishness of hypothyroidism, thyroid gland is of course a specific, and in such cases the T-wave of the electrocardiogram can be seen to rise steadily under its influence.

Hypertensive heart disease may possibly be prevented in part by symptomatic treatment of nervous tension, nephritis or whatever may be behind the condition.

In congenital heart disease, we are helpless so far as prevention by drug therapy goes, except occasionally, perhaps, in the treatment of syphilis in the parents to prevent congenital syphilis in the children.

In the nervous heart, or effort, syndrome, treatment of the underlying condition may include sedatives such as bromids, but psychotherapy and regulation of life are much more important.

SYMPTOMATIC DRUG THERAPY IN HEART DISEASE

The next group of drugs of value in heart disease that must be discussed briefly, before I take up digitalis and quinidin, are those used symptomatically, chiefly in heart failure. Sedatives are often invaluable, whether to quiet the irritation from palpitation or to relieve the distress or cough due to heart failure. Bromids, hypnotics and narcotics all have their place.

Diuretics in the presence of edema are frequently of value, if digitalis itself is not rapidly or sufficiently effective. Purgation in moderation may be helpful, but a patient may be unduly exhausted by the use of purgatives. Diaphoretics are in general contraindicated.

Very valuable symptomatic therapy lies in the use of the vasodilators, the nitrites, particularly amyl nitrite and nitroglycerin, for the pain of anginal failure, and occasionally for the spells of nocturnal orthopnea which, without the use of vasodilators, would go on to pulmonary edema. For the more extensive agony of coronary thrombosis, morphin may be needed. Stimulants have occasional value; for example, caffein may be used in respiratory distress, particularly to regulate the respiration in Cheyne-Stokes breathing.

Rarely, strychnin, as nux vomica, to stimulate the appetite, may be of use; in large doses it is a stimulant to the central nervous system, but for ordinary use in heart disease it is ineffective, and in failure with a rapid ventricular rate in auricular fibrillation it is probably contraindicated. Camphor, epinephrin and other such drugs have little or no place in cardiac therapy. We waste enormous quantities of these drugs annually.

DIGITALIS

Indications for Its Use.—The use of digitalis is indicated in only two conditions: first, in heart failure of the congestive type, and second, in auricular fibrillation or auricular flutter with a rapid ventricular rate, whether or not failure is present. Digitalis is a toxic drug, and unless there is some clear indication for its use I do not believe that it should be given. It is conceivable that it may sometimes do more harm than good.

I once so irritated my heart by digitalis taken experimentally that I produced frequent premature beats, at times bigeminal, at the height of the effect, an annoying palpitation accompanying this phenomenon, and for some months thereafter I suffered from occasional short paroxysms of tachycardia. In two patients, I have actually induced paroxysms of auricular fibrillation by digitalis. Thus it is obvious that digitalis is an irritant to the heart.

Its routine use in infectious disease, whether typhoid fever, influenza or pneumonia, and its routine use before or after operation is to be deplored. If auricular fibrillation or flutter or congestive failure should supervene in any of these conditions, we can, by large doses of digitalis administered by mouth or intravenously, quickly combat the condition within a few hours at the most. Relatively rarely does such a need arise; therefore, there is no reason for afflicting everybody with a poisonous drug when only now and then it may be needed.

Even in emergency, digitalis is often given when it is not indicated, for example, in so-called surgical shock or in the prostration due to an infectious disease. Under such circumstances, the condition is primarily not heart failure: it is a toxic vasomotor failure. In such a condition as vasomotor collapse there is no indication for digitalis.

The particularly remarkable reputation of digitalis is due mainly to its dramatic effect in auricular fibrillation. The impression seems to be rife in some quarters that the drug may be as effective in normal rhythm as in auricular fibrillation. The reason this is not so is obvious: Digitalis acts in two ways on the heart: first, it depresses conduction, thereby inducing heart block; second, it acts directly on the myocardium to increase the degree of systolic contraction. This second effect will occur both with normal rhythm and auricular fibrillation, but the benefit from the first effect is almost wholly one-sided.

Depression of conduction in normal rhythm rarely produces dropped beats, and the depression of the pacemaker is often insufficient to reduce the pulse rate. Extreme depression of the pacemaker by digitalis may, however, actually produce auricular paralysis with standstill and idioventricular rhythm (so-called complete sino-auricular block). This is not particularly desirable, though some reduction in pulse rate at times may be, if it can be brought about. In auricular fibril-

2. Capps, J. A.: Eight Cases of Malignant Endocarditis, report read before the Association of American Physicians, Washington, D. C.

lation, however, the conduction system is particularly susceptible to the effect of digitalis, and it is in this condition that a rapid reduction of ventricular rate of 20, 40, 60 or even 80 or 100 beats a minute may bring much relief to the heart.

It is for this reason that Lewis has spoken of digitalis as a sedative for the heart more than as a stimulant. Occasionally, by proper saturation with digitalis, the heart rate may drop within from forty-eight to seventy-two hours from 170 to 70. The saving of 100 beats a minute for the heart (most of them ineffective anyway in supporting the circulation) means the saving of more than 100,000 contractions a day. This means an astonishing rest for the myocardium in the course of hours and days.

No wonder that the rapid recovery from grave congestive failure under such conditions seems like a miracle. In flutter of the auricles, the mechanism by which digitalis brings relief to the overworking heart is somewhat similar. An increase in the degree of auriculoventricular block is produced from two to one to four or more to one; finally, fibrillation of the auricles which is paroxysmal may be induced, giving way to normal rhythm in some cases. Thus, once more I want to emphasize the fact that digitalis acts not only as a stimulant in increasing the degree of systolic contraction in auricular fibrillation as well as in normal rhythm, but also, by its sedative action on the heart, it improves the circulation far more effectively in auricular fibrillation than in normal rhythm. Although MacKenzie and Lewis have perhaps expressed an extreme opinion concerning digitalis action, their view is worthy of widespread adoption, with the simple qualification that in normal rhythm also digitalis may be effective in some cases of failure.

Administration of Digitalis.—After the discussion of the indications for digitalis therapy, a few words should be said about the method of administration. Given a leaf of proper potency as determined physiologically, it matters little or not at all whether it is administered in pill form as powdered leaf, by tincture or infusion, though the last, if made according to the U. S. Pharmacopeia directions, will be too weak. Usually not enough digitalis is taken. If there is urgent need for its use, it should be given in sufficient dosage to saturate the system in forty-eight hours or less.

Estimation of this amount by weight is desirable, and Eggleston [3] has suggested 0.15 gm. of the leaf (or 1½ cat units) for every 10 pounds in weight. One half of this amount may be given at once and another quarter after six hours, an eighth more in six more hours, and so on until saturation is evidenced by toxic symptoms, by marked reduction in ventricular rate or by the production of a coupled pulse. I have found that the amount figured out for a satisfactory saturation may be sometimes 0.1 gm. of the standardized leaf rather than 0.15 gm., which in some cases may result in disagreeable toxic symptoms. Also, I think this dosage may be spread through two days more evenly, that is, by giving one sixth of the dose three times a day for two days.

However, these are merely slight variations of the original directions of Withering that digitalis be given "until it either acts on the kidneys, the stomach, the pulse, or the bowels," so long neglected by the medical profession and emphasized again of late years by Eggleston, Robinson,[4] and others. In a few cases I have given nearly the whole calculated dose of digitalis in one administration, but the production of auricular fibrillation or severe nausea and vomiting makes this unwise. The best course to steer generally is the middle one, between ineffective small doses and a maximal dose at the outset.

That recognition of the proper dosage of digitalis is relatively recent, and that in some quarters the proper dosage is not even now recognized, is illustrated by two cases:

A woman with rheumatic heart disease, mitral stenosis, auricular fibrillation and anasarca was treated less than twenty years ago without any satisfactory reduction of ventricular pulse rate or edema in weeks of hospital care in bed. She was given digitalis, but too little. After discharge, still with an apex rate of more than 100 and with edema, she was treated by an especially discerning internist, who afforded her quick and extensive relief by digitalization.

A woman of middle age with rheumatic heart disease, mitral stenosis, auricular fibrillation and marked anasarca, whom I saw last year with a physician in a country town, had received small doses of digitalis and crategus without relief. I ordered saturation, and two days later she was unbelievably improved. The physician was amazed at the dosage of digitalis employed.

Another important point concerning the administration of digitalis is the maintenance of saturation when indicated, as it very often is. One of the weaknesses of the past in the treatment of heart failure has been the frequent discontinuance of digitalis after a beneficial effect had been secured in auricular fibrillation. This was undoubtedly the result of the failure to recognize the nature of absolute arrhythmia. As the patient in the course of two or three weeks excreted the accumulated digitalis, he would lose its beneficial effects, his pulse rate would rise, and again he would go through an attack of so-called cardiac decompensation. This attack, in turn, would be relieved by a so-called course of digitalis often too slowly carried out, and then the process would be repeated. Thus time, money and strength would be lost by the working man or woman, and undoubtedly life would be shortened by this widespread failure to realize the need of maintaining saturation in auricular fibrillation.

In general, the adult system excretes the equivalent of from 0.1 to 0.2 gm. (from 1½ to 3 grains) of the leaf daily, the equivalent of from 1 to 2 c.c., or from 15 to 30 minims of the tincture. Therefore it is necessary to administer this amount every day to maintain saturation when once it has been properly secured. This point cannot be overemphasized, for patients hitherto badly crippled may be kept at work for months or years in relative comfort by daily administration of digitalis. There does not seem to be any injurious effect from this long-continued use of the drug.

Finally, with regard to the administration of digitalis, the question arises as to whether or not it is effective in small doses over long intervals of time. Of course, if the small daily dose is in amount just above the amount daily excreted, there may be a very gradual accumulation and finally a saturation with beneficial results. If, however, very small doses are given which do not allow accumulation, the effect is problematic. Empirically, there seems to be at times some benefit in such cases; but the effects are so doubtful, or other measures are so often more responsible for the

3. Eggleston, Cary: Administration of Digitalis by "Eggleston Method," J. A. M. A. **74**: 733 (March 11) 1920.

4. Robinson, G. C.: Southern M. J. **13**: 396 (June) 1920.

improvement experienced that one should maintain an open mind on this point until more evidence has been accumulated, if possible. Always we must remember to discount the benefit derived from other therapeutic measures, such as rest in bed, in the analysis of the benefits from drug therapy.

One last phase of the discussion of digitalis remains. Of what value are the other drugs of the digitalis group—strophanthus, squill, apocynum and convallaria? I believe that they may all be discarded from our resources in the treatment of heart disease. Digitalis will do as well or better all the things that these other drugs can do in improving the circulation. Even strophanthus may, I believe, be dispensed with. Whether administered by mouth or by vein, digitalis is as good or better. Rarely is intravenous digitalization necessary in any case and, when it is, we can secure effects in a few minutes from good digitalis preparations. At times it is said that squill, apocynum or convallaria is less toxic than digitalis. This lesser toxicity in such cases simply means that the preparation is relatively inert. Crategus has apparently no effect on the heart, even in very large doses, and so does not belong to the digitalis group.

QUINIDIN

Quinidin sulphate is the first important drug, since the introduction of digitalis by Withering more than a hundred years ago, that proved to have a specific effect on the heart. Its trial followed the discovery a few years ago that quinin could on rare occasions abolish the absolute arrhythmia of the heart, called auricular fibrillation. It has already passed through the preliminary test stage, and certain fairly definite indications and contraindications for its use have been noted. By some its praises have been extravagantly sung; by others it has been condemned as a dangerous or, at least, a useless drug. As so often happens, the truth seems to lie between these extreme views. It is still a bit too early to advise its use at large in the community, but there is absolutely no reason why it should not be employed to considerable advantage in properly selected cases under close observation. The proper selection of the cases and, for the present at least, their reasonably close observation are essential.

Indications for the Use of Quinidin.—Again, as for digitalis, I shall discuss first the indications for the use of quinidin sulphate and then the manner of its administration. Quinidin is indicated particularly in the treatment of auricular fibrillation of recent origin, preferably of less than six months' duration, when heart failure has not been, or is not, an important feature, and in the prevention of paroxysmal auricular fibrillation.

Sex does not seem to play any rôle in the favorable or unfavorable response to the drug. Age and the type of heart disease responsible for the auricular fibrillation in our series of seventy-five cases seem to play something of a part, the older and arteriosclerotic and thyroid patients behaving better than the younger and rheumatic patients.[5] Seventy-six per cent. of the twenty-one arteriosclerotic patients were restored to normal as compared with 61 per cent. of the forty-four rheumatic patients, and 43 per cent. of the arteriosclerotic patients maintained normal rhythm as compared with 27 per cent. of the rheumatic patients. The duration of heart disease and, particularly, the duration of the auricular fibrillation do influence the reaction considerably.

Chronic heart disease, especially with chronic mitral stenosis and auricular fibrillation more than a year old, is in general a contraindication, for several reasons. First, there is a very real danger from embolism (cerebral, pulmonary or other) and from auricular thrombosis, when the auricles start again their normal contraction after years of the ineffective activity occurring in fibrillation. Also, thrombosis in the auricles is more common in mitral stenosis than without stenosis. The second reason for not recommending quinidin in such cases is that in a relatively low percentage the heart returns to normal, and most of those that do return to normal relapse again shortly.

Heart failure also seems to be a contraindication to the use of quinidin. Auricular flutter is an occurrence, during its use, that indicates the advisability of stopping the drug. In two cases of our series, flutter induced from fibrillation by quinidin was stopped under further quinidin therapy with poor results for the patients. Rarely, patients are sensitive to the drug and, if not properly tested first, may be subject to severe toxic effects, such as the respiratory paralysis reported by Frey.[6] Rarely, sudden death results from an unknown cause—perhaps embolism, perhaps ventricular fibrillation.

Drs. Viko and Marvin have assisted me in a clinical study of the action of quinidin sulphate during the last year. We have given it in seventy-five cases of persistent auricular fibrillation and flutter (three of the latter) at the Massachusetts General and New Haven hospitals. The first sixty cases were unselected, and our conclusions from this group I have already expressed. In the total seventy-five cases, fifty-one hearts, or 68 per cent., were restored to normal rhythm, and of these, twenty-six, or 35 per cent., have maintained normal rhythm for from a few weeks to a year at the present writing.

In twenty-seven cases of auricular fibrillation of less than six months' duration, twenty-two hearts, or 81 per cent., were restored to normal rhythm, and fifteen, or 56 per cent., maintained normal rhythm. In twenty-three cases of auricular fibrillation of more than two years' duration, eleven hearts, or 48 per cent., were restored to normal, but only three, or 13 per cent., maintained normal rhythm. In forty-eight cases of congestive failure, thirty-two hearts, or 67 per cent., were restored to normal, but only eleven, or 23 per cent., maintained normal rhythm, while in twenty-seven cases in which failure did not occur, nineteen hearts, or 70 per cent., regained normal rhythm and, fifteen, or 56 per cent., retained it.

Seven of a group of nine patients with paroxysmal auricular fibrillation (and flutter) have been much benefited because of the marked reduction or abolition of the attacks by quinidin. In other cardiac disturbances, such as premature beats, heart block and paroxysmal tachycardia, the action of quinidin is uncertain or useless. Occasionally premature beats can be abolished but they recur on stopping the drug. Quinidin should not be used indiscriminately for arrhythmia, and certainly should not be administered simply because a patient with heart disease is not doing well, his physician having heard vaguely of the new cardiac therapy with quinidin.

5. Quite likely this is because failure occurred more often in the rheumatic cases of our series than in the arteriosclerotic cases.

6. Frey, W.: Therap. Halbmonatsh. 35: 534-536 (Sept. 1) 1921.

It is in auricular fibrillation of recent origin, without heart failure or pronounced mitral stenosis, that quinidin therapy seems at present to be especially indicated. The fact that the restoration to normal rhythm often brings striking relief, chiefly from the subjective discomfort of the palpitation, is familiar to all who have treated many patients. It is also conceivable that, if the onset of permanent fibrillation can be indefinitely postponed, life may be prolonged.

Administration of Quinidin.—A satisfactory method for the administration of quinidin may be briefly stated. I have felt that it is wisest to administer digitalis before starting quinidin, especially if there is any heart failure, although we have restored normal rhythm in two patients not digitalized and in four other patients who were not benefited by the digitalis. Two test doses of quinidin sulphate of 0.2 gm. (3 grains), each in capsule or tablet, are given, one at 2 p. m. and the other at 4 p. m. If there are no toxic symptoms of cinchonism, 0.4 gm. (6 grains) is given at 10 a. m., 12 m. and 2, 4 and 6 p. m., the following day and the day or two after until the rhythm becomes regular, either because of the onset of flutter or of normal rhythm, or until toxic symptoms appear, though such are rare with this dosage.

If fibrillation continues after this amount of 4.4 or 6.4 gm. of the drug has been administered in two and one-half or three and one-half days, it is hardly worth while to give more, for, even if normal rhythm is later induced, it is likely to relapse quickly to fibrillation. Thirty-one, or 60 per cent., of our fifty-one patients whose hearts were restored to normal rhythm required less than 4 gm. of quinidin, and eighteen of these, or 58 per cent., maintained normal rhythm, while of the other twenty patients requiring more than 4 gm. twelve, or 60 per cent., relapsed. The shorter the duration of fibrillation, the less the amount of quinidin necessary to restore normal rhythm.

Finally the question of rationing comes up. Daily rations of 0.4 gm. (6 grains) of the drug are effective in the prevention or reduction of paroxysms of auricular fibrillation. There seems to be some indication also that it may be wise to ration patients with permanent fibrillation after the return to normal rhythm, but in some cases normal rhythm was maintained for months without rations. Rationing with less than 0.4 gm. a day has been generally less satisfactory than rationing with 0.4 gm. After weeks or months, the drug may be omitted to see if normal rhythm can be maintained without it. There are sometimes auditory disturbances on long continuance of the drug.

CONCLUSION

Definite indications exist both for the use of digitalis and for the use of quinidin, and neither drug should be given indiscriminately to patients with cardiac symptoms or signs.

ABSTRACT OF DISCUSSION

DR. JOHN WYCKOFF, New York: Dr. White has pointed out the way in which we should bend our energies in the future study of quinidin. To date there are only about 500 reported cases of patients treated with this drug. In the different clinics in which this drug has been studied, all cases of auricular fibrillation have been treated as they presented themselves. They have not been selected. This has been the first step. Auricular fibrillation is not a disease. It is a functional change, sometimes temporary, at other times chronic, due to different causes, such as toxins, acute infections and chronic myocardial change. Furthermore, we know that the treating of unselected auricular fibrillation has been attended by certain untoward symptoms and a considerable mortality. The reaction against the use of the drug is likely to be great unless it is stressed, as Dr. White has pointed out, that the greatest benefit and fewest untoward effects seem to occur when quinidin is used in cases of auricular fibrillation of short duration and in cases of paroxysmal fibrillation.

DR. FRED M. SMITH, Chicago: I fully agree with what Dr. White has said. He has taken a very rational point of view of the whole question. It is well known that patients with auricular fibrillation do very well with digitalis. In most instances the medication has to be continued over long periods of time. Ambulatory patients may be taught how to estimate the amount of digitalis necessary in their case. They are instructed in regard to taking their heart rate, and are told that a continued rapid rate should not be permitted. They take sufficient digitalis to maintain a reasonable check on the cardiac rate. At present it would seem that quinidin may be given with very little danger in the type of cases in which Dr. White has recommended the use of this drug. It would also seem that the medication may be continued in small doses over long periods of time without any apparent ill effects. I have patients under observation who have taken 3 grains once or twice a day over a period of four or five months without harm. Dr. Pardee tells me that he has a patient who, contrary to his instructions, continued taking 5 grains once a day for about a year without harmful results. Quinidin may be of value in the treatment of the premature contraction. It is well known that this condition may be very alarming to the patient, and the drugs that are ordinarily employed in the treatment of cardiac conditions often do not influence the frequency of this disorder. In some of our patients who did not respond to other methods of treatment, quinidin eliminated the premature beat. The general condition rapidly improved in some instances following the disappearance of the premature contraction. They were able to sleep, their appetite returned, and one patient gained 20 pounds. In the beginning of the treatment the patients were instructed to take 3 grains three times a day. Later the number of doses was reduced to two and finally to one dose a day. In some cases the quinidin has been discontinued without a return of the premature contraction. The patients were instructed to take the medicine as far as possible a short time before the expected time for the appearance of the irregularity of the heart. In some cases the premature contraction appeared most frequently after meals; in others after retiring at night, and in one instance at 2 or 3 o'clock in the morning. In some cases the quinidin apparently did not influence the frequency of the premature contraction.

DR. WALTER J. WILSON, Detroit: In the main, I agree with what Dr. White has said. However, I am not willing to delete all the drugs that he has. I have had very satisfactory results from the use of strophanthin intravenously. Ordinarily I start with $\frac{1}{500}$ grain and increase to $\frac{1}{250}$ grain. In a case of pulmonary edema in which one wishes quick results, strophanthin is satisfactory in combination with caffein. Also, when tincture of digitalis is ineffective in doses of 2 drams a day, after three days' use, in cases of auricular flutter, the addition of squills, in the form of syrup of squills, one-half teaspoonful four times a day, has a number of times resulted in the resumption of normal rhythm within from twenty-four to forty-eight hours. I have had one unfortunate result from the use of quinidin, in a case of mitral stenosis in which the auricles had been in fibrillation for about eighteen months. Five grains was used one day and 10 grains the next. After the use of 10 grains of this drug, no change was noted in the electrocardiogram. However, after taking an additional five grains, the patient had an attack of embolism in the night and died within a few moments. No one can definitely state that this accident was due to quinidin, but the fact remains that it occurred soon after its administration. The patient had been very satisfactorily controlled by the continued administration of digitalis, and it would have seemed the better policy to continue the conservative line of treatment. Quinidin apparently produces an acute disturbance in the heart muscle, and should be used with great caution. The careful administration of this drug should mean that these patients should be put to bed, and during the period of admin-

istration, should be treated as cases of acute cardiac decompensation. I do not advocate, as yet, its use by the general practitioner. Paroxysmal fibrillation ceases with such great suddenness that it is not safe to base general conclusions for its use on the observation of such cases.

DR. LOUIS FAUGERES BISHOP, New York: I endorse everything Dr. White has said. The weak point in our fibrillation study at present is that only a few of us have had a chance to know the natural history of the fibrillation. For the last few years I have instructed every one who had attacks of palpation to come immediately to the office for an electrocardiogram. I have found in this way that short, self-limited attacks of fibrillation are comparatively common. We cannot always diagnose them clinically particularly when the pulse is pretty regular. Fibrillation is much more common than we believed. The natural history of chronic fibrillation is that it begins by short, self-limited attacks. These attacks become longer, and by and by, when some time has passed, the condition becomes permanent. It is very hard to appraise justly the effect of any treatment in diseases characterized by recurrent, self-limited attacks. When I was a young man, I thought I was getting wonderful results in epilepsy because I had a lot of people who did not have attacks, but close study showed that those with remissions were coming to me and the others were going elsewhere. It is very hard to judge of treatment in self-limited, recurrent conditions. There is no doubt whatsoever that quinidin has a specific effect, but I think the value of it is rather exaggerated at present. The continuous use of digitalis over long periods of time in old heart cases has been accepted by some of the best clinicians in the world. I would not be without this resource. I believe that a person having attacks of decompensation should take digitalis continuously. There is this class of heart patients who should take digitalis over long periods of time. Of course, suitable intermissions and adjustments of dosage would go with the general policy of continuous use. Ipecac has certain attributes in common with quinin. I tried the use of ¼ grain of powdered ipecac and 1 grain of powdered digitalis in capsules in some cases of fibrillation. I have nothing definite to say about it, except that, curiously enough, quite a number of these old fibrillators preferred this treatment. They said that they liked the effect better than that of plain digitalis.

DR. ARTHUR E. STRAUSS, St. Louis: The paper was really on the present status of drugs in cardiac therapy. Most of the men who have discussed the paper have limited themselves to the discussion of quinidin. We must not forget to emphasize, as Dr. White did, the wonderful results we have obtained with digitalis, particularly since digitalis has been so thoroughly studied. I merely mention this to point the way along which we should work in the study of quinidin. We did get results with digitalis from the beginning of its use. We have obtained results for a long time. However, we have had our best results since the accurate work of Eggleston. That is the way in which we should study quinidin. It is very valuable to have a summary at this time of the actions, use and results of quinidin. However, I do not believe that we are justified in drawing final conclusions, as Dr. White did today, either as to the type of case in which quinidin should be used, the dosage, or the like. I should like to ask Dr. White regarding his statement that the patient preferably should be digitalized before the administration of quinidin. I do not refer to the decompensated heart. If we accept the theory of Lewis that digitalis tends to prolong fibrillation, and that digitalis and quinidin have practically antagonistic actions, why should we first digitalize the patient, thus tending to prolong the fibrillation, and then later use quinidin to stop it? There is no question that after the normal mechanism has been restored with quinidin, digitalis is a very valuable adjunct in treatment.

DR. LEE RICE, Galveston, Texas: I was much pleased to hear that Dr. White is willing to discard other drugs than digitalis in the treatment of heart disease. I am particularly interested in strophanthin. We have had two deaths at John Sealy Hospital following the injection of strophanthin. In one case a necropsy was performed in less than two hours, and the heart was found in very firm systole. A young man suffering from opium poisoning died, and the necropsy was performed in less than fifty minutes. His heart was found in firm systole. We have been recommending the discontinuance of strophantin in all cases, and giving only digitalis, or some of its preparations. In the early experimental work with quinidin, beginning about two years ago, after we had arrested fibrillation and restored a normal rhythm, if we thought a daily ration was required, we began with a better known drug, quinin hydrobromid, because we were then afraid of quinidin. We observed beneficial effects from the use of quinin hydrobromid. Now, however, we are using quinidin daily, 0.4 gm., and have had one patient taking it steadily for seven months, and another for six months, without observing any detrimental effects.

DR. GEORGE B. CROW, Burlington, Iowa: I want to ask Dr. White what, if any, drugs he found effective in paroxysmal attacks of tachycardia.

DR. PAUL D. WHITE, Boston: I was much interested in the report of Dr. Smith as to the effect of quinidin in premature beats. That is a point for further study. There is no question that in some cases premature beats can be dispelled by the use of quinidin, and by thoroughly extensive study we may find out which cases are helped in that way. In regard to strophanthin intravenously, I have not had to use it for more than a year or two because of the satisfactory effects I have always had from digitalis. Quinidin is certainly unsatisfactory in many cases of chronic fibrillation. There is really danger for patients who have had fibrillation for years and are doing very well under digitalis. It seems hardly wise to put them to the risk of embolus when they are quite comfortable under digitalis. In paroxysmal fibrillation there is no question that we get relief in most of the cases we have handled. We had one young man who was having paroxysms of fibrillation quite regularly when I began to ration him. We gave him quinidin once a week. It was not effective. He was having paroxysms two or three times a week. Then I gave quinidin twice a week and then every other day. He would have a paroxysm on the second day. Then we gave it daily in 3 grain doses. That was almost completely effective. Following that, we gave him 6 grains a day. I believe that Dr. Strauss' final conclusions are not justified. My opinion was presented of the present status of the use of the drug. In regard to digitalis: Some of the cases we have just treated have been taken without selection, and some of them had a good deal of failure. We did not feel justified in giving quinidin to a patient who had more or less failure with a rapid ventricular rate. We feel that we should restore circulation first. Our results from the use of quinidin after the use of digitalis have been as good as anybody's. Our percentage of restoration to normal rhythm has been quite high. Whether or not we would get better results with the use of digitalis first, I do not know. You can saturate the patient with digitalis and give him quinidin and restore normal rhythm within a day or two. I have been asked to say something about patients who cannot take digitalis because of nausea. Such patients can take drugs of the digitalis group, but they take them in such small doses that they do not get benefit from them. They have to be treated by other measures, rest in bed and sedatives, and whatever measures we have to combat the symptoms of heart disease.

Change in Attitude Toward Mental Cases.—Until a comparatively recent period, the individual who showed aberrant behavior traits was looked upon as an outcast from the social group and was made to pay a heavy penalty for being different from his fellows. Within the last two decades, however, a radical change has taken place in the community attitude toward the individual who does not conform to its customs and standards of conduct. Two factors contributed more than any others to bring about this change. The first was the recognition of insanity as a form of disease and the equipment of hospitals for the care of the mentally sick. The second was the development of modern psychology, with its refutation of the old philosophical doctrine of freedom of the will and its conception of the human individual as an organism able to react only within the limits of instinctive, emotional, and intellectual endowment.—Sands and Blanchard, *Mental Hygiene*, July, 1922.

FURTHER EXPERIENCES WITH PHENOBARBITAL (LUMINAL) IN EPILEPSY *

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At the session of the American Medical Association in 1920, I had the privilege of making a summary report on personal experiences with phenobarbital (luminal) in the treatment of epilepsy [1] which was based on the observation of about 100 cases. The majority of them had been under treatment for periods varying from several months to two years, while only a small number had been under uninterrupted treatment since 1914.

This paper is based on a total of 200 cases of epilepsy under my care, exclusive of the patients sent only for consultation and of those who did not return after one or two visits.

My first patients were principally the mild type of ambulatory epileptic, who naturally brought to the office similar material. Following the publication of my paper, however, I was visited by persons with some of the most intractable cases—patients who had received various remedies with little or no benefit, and others who had already been given phenobarbital with indifferent or no results. This might explain the differences in results as compared with the first patients treated with phenobarbital.

The uncertain manner in which different patients reacted to the same remedy must have also puzzled some of my colleagues, from whose correspondence I learned that they were gravely disturbed by the possibility that the American-made product might not be identical with that manufactured in Europe. In order to gain some certainty on this point, I ran two series of ten cases each, one group receiving the domestic article, while the other was given imported phenobarbital. From a careful comparison of results I concluded that there were no essential differences between the two products, that if there were any differences, they were those of patient and disease, not of drugs.

In order to facilitate description, I shall record my experiences under the subheadings of (1) grand mal, (2) petit mal, (3) mixed types, (4) psychic epilepsy, (5) epilepsy in the insane, and (6) epilepsy in the feebleminded.

GRAND MAL EPILEPSY

There being very few cases of grand mal without an admixture of some petit mal attacks, I class under this caption the cases in which the attacks are principally of the major type, though occasional minor seizures are also recorded. There were under my observation sixty cases—forty for a period of three years, ten during a period of five years, and ten from a few months to seven years. Eight of the patients belonging in this group had no attacks in four years, and twenty none in two years, while the rest enjoyed immunity from seizures during periods varying from a few months to nearly two years. Three of my patients were uninfluenced by treatment; even maximum doses failed to produce the slightest effect on the attacks.

The average dose was 2 grains (0.13 gm.) of phenobarbital daily, given at night before retiring in nocturnal epilepsy, and during the day in the diurnal form. The benefits obtained from average doses of phenobarbital within a few days from the beginning of treatment were such that for some time at least I gave myself up to the belief that failure to obtain results in a given case of epilepsy meant that the dose of phenobarbital was inadequate. Like others, I soon discovered that even in this, the most responsive group to the phenobarbital treatment, there are individuals who are refractory to the largest doses of phenobarbital; fortunately, these are exceptions. In a general way the statement still holds good that the convulsive variety of epilepsy almost always yields to phenobarbital in correct dosage, and that it is mostly the wrong dose which is responsible for unsatisfactory results and toxic symptoms.

PETIT MAL EPILEPSY

In this group I put the patients suffering principally from minor attacks, with almost complete freedom from the major ones. Minor seizures may last from a few seconds to a minute, and are accompanied by vasomotor phenomena, such as a change in color, especially blanching of the lips at the oral angle, momentary losses of consciousness, or the development of slight motor phenomena short of convulsions.

For the purposes of this report I may divide the entire group into two subgroups: (*a*) petit mal cases in which attacks occur at short or long intervals as isolated seizures, with perhaps an occasional major attack, and (*b*) cases in which the seizures occur quite frequently—from twenty to a hundred daily, with only occasional major attacks.

(*a*) There were seventy cases belonging to this subgroup, that is, they were patients who suffered from petit mal seizures and had a history of but few major attacks. In ten cases there was complete disappearance of both petit and grand mal attacks during a period of from one to two years, while in sixty there was marked diminution as to frequency; instead of one or two daily there were perhaps two monthly spells.

The cases were treated by the fractional method of administering phenobarbital, namely, in divided doses of from ½ grain to 1½ grains (0.03 to 0.1 gm.) of phenobarbital three times daily. Improvement in this class of patients was marked. All spoke of eventual cures, and none desired to return to older methods of treatment.

(*b*) In patients affected with numerous petit mal attacks daily, each lasting perhaps a second, phenobarbital was not nearly so effective as in those of subgroup *a;* nevertheless, the drug exerted a beneficial effect in that the number of seizures was considerably reduced. Of the thirty-five cases coming under my observation, I was unable by the administration of moderate-sized doses of phenobarbital to modify the course in eight, while very large doses became prohibitive on account of the production of drowsiness and apathy. We were evidently confronted with the worst form of epilepsy, and the failures were less surprising than the successes.

* Read before the Section on Nervous and Mental Diseases at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

1. Grinker, Julius: Experiences with Luminal in Epilepsy, J. A. M. A. 75: 588 (Aug. 28) 1920.

The average dose of phenobarbital administered to these patients was 1½ grains (0.1 gm.) three times daily, but I usually begin with three-fourths grain (0.05 gm.) and then increase to 1 grain (0.065 gm.), 1¼ grain (0.08 gm.), 1½ grains (0.1 gm.), 2 grains (0.13 gm.), 2¼ grains (0.15 gm.) and then to a maximum dose of 2½ grains (0.16 gm.) of phenobarbital, three times daily. Each of the doses mentioned is tried for only three days in order to discover its efficacy for a particular case. The rule is to give as little as possible, but sufficient to make an impression on the number of attacks. In some cases that are slow to respond to medium-sized doses, occasionally results are obtained by overpowering the system with large doses, thus breaking the epileptic habit, and then gradually returning to average doses.

MIXED TYPES

As the majority of patients with epilepsy suffer from both grand mal and petit mal attacks, all of the cases may be considered mixed. But, having already divided epileptics into the predominantly grand mal and the predominantly petit mal cases, I speak of those patients as belonging to the mixed types in whom the two kinds of attacks occur in about equal proportions. Of this group I treated thirty-five cases during periods varying from a few months to several years. There was improvement in all of them. In ten of the cases there had been no attacks of either variety during periods of from several months to one year; then perhaps one or two attacks would occur with another interval between, lasting weeks or months. In the remaining twenty-five cases of this group, major attacks did not return, while minor seizures were reduced to occasional ones—possibly once or twice monthly. In two cases only the major attacks were favorably influenced, having become less frequent, while minor attacks continued as before.

The usual dose of phenobarbital administered in these cases was from 2 to 3 grains (0.13 to 0.195 gm.) daily, divided into two or three doses.

PSYCHIC EPILEPSY

Four cases of psychic epilepsy came under my observation, all responding favorably to treatment with phenobarbital. One patient with postparoxysmal excitement and homicidal tendencies following the major attacks ceased to develop furors since the remedy caused the disappearance of the convulsions. Another patient, the victim of epileptic somnambulism occurring monthly or bimonthly, has been free from sleep walking during an entire year while under treatment with 2 grain (0.13 gm.) doses of phenobarbital nightly. Similarly, a case of postparoxysmal ambulatory automatism lasting sometimes hours after an attack reacted favorably to treatment with phenobarbital. The fourth case was one of postparoxysmal delirium with destructive tendencies. There were no outbreaks of furor during eight months while under treatment with phenobarbital.

EPILEPSY IN THE INSANE

My personal experience with epilepsy in the insane was limited to one patient who presented symptoms of dementia praecox with advanced mental deterioration. After a short course of phenobarbital the seizures became few, but the psychotic manifestations were as numerous as before treatment.

On account of the dearth of cases in my own practice, I may be pardoned for briefly referring to the work of others:

Foley[2] relates his clinical experiences with phenobarbital in the insane and arrives at the following conclusions:

> Notwithstanding the reduction in the number of convulsions, the severity of each convulsive attack of those having convulsions was greatly increased; there was a marked increase of irritability and in some this increased to deep furor. Attacks were so severe in some that removal to the hydrotherapeutic department became necessary. A few developed status with fatal results. The attendants in charge experienced greater difficulty in controlling the patients while under the luminal treatment than under the bromide medication. Injuries were more numerous, and at the end of the three months' period the luminal treatment was discontinued.
>
> From our observation of these two groups we have decided that so far as luminal in the treatment of the epileptic with psychosis is concerned, it is of no special benefit. We are getting better results with the old-time bromide mixture and careful regulation in diet. Our patients are quieter and injuries are less than during the months when they were under the luminal treatment.

Sands,[3] an equally reliable observer, and one working with similar material, had more favorable results: He studied eighty-six cases of epilepsy, covering a period of eight months and limited to female psychotic epileptic patients. He employed the dose of three-fourths grain (0.05 gm.) three times daily, and speaks of striking results. There was a decided decrease in the number of seizures (from 502 recorded seizures in May, 1919, to only eight seizures in May, 1920), and the convulsions were milder and of shorter duration. There was a definite decrease and change in the unpleasant after-effects of the seizures. He was enabled to parole patients whom he otherwise would not have considered fit to leave the institution. Patients became quieter, and the general morale of the ward showed a decided improvement. There was a decided decrease in the number of injuries received during seizures, and in the number of altercations with other patients. Fewer demands were made on the overworked staff. The after-effects of the drug have been practically nil.

Kirk,[4] of the Arkansas Hospital for Nervous Diseases, with a clinical material of more than 200 cases of epilepsy, speaks thus of his experiences with phenobarbital:

> On December 8, 1919, the most severe cases were selected for treatment. The results were so remarkable that all cases of idiopathic epilepsy were given treatment. The method consisted of 1½ grains of luminal at bedtime. There were sixty-one patients who had no convulsions since treatment was begun. One hundred and six patients had less than five convulsions while under treatment; forty-five had more than five. There was immediate decrease in the severity of the seizures, many of them changing from grand mal to petit mal; decrease in the severity of furor and a shortening of the time of confused states; a general improvement of the moral tone of the wards, and a complete cessation of seizures in a large number of cases. No deleterious effects were observed on kidneys or stomach; circulation, temperature and respiration were uninfluenced. It is not a habit-forming drug and is not attended by any pleasurable or disagreeable sensa-

2. Foley, E. A.: Institution Quarterly, Springfield, Ill., June 30, 1921.
3. Sands, I. J.: Luminal Therapy in the Control of Epileptic Seizures, Arch. Neurol. & Psychiat. 5:105 (March) 1921.
4. Kirk, C. C.: Analysis of More Than Two Hundred Cases of Epilepsy Treated with Luminal, J. Arkansas M. Soc. 17:128 (Nov.) 1920.

tion. In certain cases the drug is effective in twenty-four to forty-eight hours; in others not until a week or more has passed.

EPILEPSY IN THE FEEBLEMINDED

There were eleven patients belonging to the feebleminded group, in all of whom except one there was noted decided mental improvement after lessening or cessation of convulsions. This exception was the case of an idiotic boy, aged 3 years, suffering from numerous petit mal seizures daily. At first the attacks became considerably reduced in number, but drowsiness and a state of bewilderment regularly followed the taking of moderate doses of phenobarbital; later even large doses failed to reduce the number of attacks. This was an extremely unfavorable case for treatment, bromid having failed before phenobarbital. Contrary to the experiences of some observers of the frankly insane, the feebleminded epileptic seemed to receive a new impetus to higher mental growth. As is well known, numerous epileptic seizures favor mental deterioration even in otherwise normal persons. As soon as the cause, the epileptic attacks, had been removed, greater possibilities were created for stimulating what little mentality there was in these mentally underdeveloped patients.

Thus, an epileptic girl, aged 3 years, the subject of numerous petit mal seizures, before the administration of phenobarbital paid not the slightest attention to her environment and failed to express joy in the satisfaction of her wants. Her eyes did not follow the light, and noise left her unmoved; she did not appear to recognize persons, even her mother. Never having learned to walk or move about, she was practically a breathing automaton. After the exhibition of phenobarbital for a period of six months, during all of which time there was no recurrence of seizures, the patient began to recognize her mother; followed the light, and manifested considerable excitement at the jingling of keys; in addition, she learned to crawl and to stand up against a chair. Though the patient is still an idiot and will probably always remain one, this glimmer of intelligence makes her less of a charge than before treatment.

Another case worth special mention is that of an imbecile woman, aged 35. She suffered from mixed epileptic seizures all her life, and finally had deteriorated physically and mentally, so that she rarely left her bed and never her room. Before treatment she enjoyed the pleasures of a 3 year old child. After a short course of treatment with phenobarbital in 1½ grain (0.1 gm.) doses night and morning, she regularly joined her family at meals, engaged in general conversation, and cleared up to a degree never anticipated by her people.

BY-EFFECTS OF PHENOBARBITAL (TOXIC SYMPTOMS)

During the administration of phenobarbital, whether given to produce sleep or as an antiepileptic remedy, certain unpleasant after-effects have been observed. These followed mostly the administration of large doses, though in a few instances average doses had the same effect. Chief of these were: (*a*) certain forms of dermatitis resembling the exanthem of measles and scarlet fever, appearing either early or late in the course of treatment with phenobarbital; (*b*) states of apathy; drowsiness and sluggish mentality, bordering on idiocy; ataxia, and slow speech—conditions often observed after large doses of bromid in the days before phenobarbital—especially after large doses of phenobarbital; (*c*) conditions of asthenia, or extreme muscular weakness, characterized by an inability to dress or attend to nature's calls; (*d*) extreme irritability and an irascible temper, leading sometimes to violent acts, and (*e*) states of intoxication allied to that of alcohol and often mistaken for it.

(*a*) In my series of 200 cases I found six patients with hypersensitive skins who developed rashes resembling measles: two of this number regularly when the dose of phenobarbital exceeded 3 grains (0.195 gm.) daily; of the others two became somewhat feverish with the rash; the remainder could not take the smallest dose of phenobarbital without suffering from an itching eruption. After the administration of liquor potasii arsenitis (Fowler's solution) in 5 drop (0.3 c.c.) doses three times daily, three of the patients could continue with moderate doses of phenobarbital so as partially to control the epileptic seizures.

(*b*) As an example of apathy may be cited the case of a man, aged 25, who had suffered during a period of ten years from numerous petit mal attacks, with occasional grand mal attacks. Small doses of phenobarbital failed to effect a decrease in the frequency of seizures; it became, therefore, necessary to push the dose to 3 grains (0.195 gm.) three times daily. The effect was a subsidence of attacks; but the patient talked and acted like a dribbling idiot, became ataxic in gait, and his speech was unintelligible. With these after-effects following the larger doses, it became necessary to reduce the dose of phenobarbital, but the effect on the attacks remained minimal.

(*c*) The patient with asthenia was a boy, aged 17, who had suffered from attacks of petit mal to the number of from twenty-five to fifty daily; bromids exerted little or no effect. The patient was referred to me for the exhibition of phenobarbital in effective doses, the usual dose having been tried by the family physician without the slightest benefit. After doses of 8 grains (0.5 gm.) daily, the patient became practically a vegetating automaton; he became weak and could not move about; the weakness was more muscular than mental. Smaller doses are now being given by the family physician, who reports that the attacks are not quite as frequent, but the patient manages to get about and is otherwise fairly comfortable.

(*d*) After taking phenobarbital, several of the patients changed from a state of more or less constant depression before taking the remedy to one of exaltation, irritability, quarrelsomeness and general fault finding. Not having previously noticed this phenomenon in my patients, I attempted to explain to myself the irritable attacks as epileptic equivalents. Soon, however, I discovered similar phenomena in others, and I concluded that they were the result of treatment with phenobarbital. In most of the cases these manifestations were lessened in frequency when the dose was slightly reduced, or disappeared after the same dose was continued. One patient not only displayed an irascible temper, but also became violent and assaulted his family. In that case I was obliged to give very small doses of phenobarbital, combined with moderate doses of bromids, and thus I lost the beneficial effects on the epileptic seizures, while gaining peace for the family.

(*e*) An example of phenobarbital producing a state of intoxication like that of alcohol is the case of a

man, aged 54, who was a sufferer from numerous attacks of minor epilepsy which had a tendency to throw him to the floor suddenly. Average doses of 1½ or 2 grains (0.1 or 0.13 gm.) of phenobarbital did not have the desired effect on his attacks; the larger doses, up to 4 and 5 grains (0.26 and 0.32 gm.) daily, had a marked beneficial effect on the seizures, but the patient after taking the medicine acted and felt as though under the influence of alcohol. So much did this state resemble ordinary drunkenness that his friends and neighbors repeatedly accused him of drinking "moonshine." During these phenobarbital "sprees" his speech became thick and indistinct, he slurred his words and syllables, and he developed a reeling gait. Mentally he was alert, and conversed on topics of the day, but was rather euphoric and always in an exalted mood. It became necessary to reduce the dose and allow the patient to have occasional attacks.

Almost from the day that the drug had become known as a hypnotic, the continental journals contained references as to the toxicity of phenobarbital. The doses administered were naturally larger than those given in epilepsy, and toxic effects were observed often. Thus, Emanuel [5] reported on the exanthems of phenobarbital in 1912, and Patschke [6] in the same year reported a case of phenobarbital intoxication in which the patient became loquacious, excited, exalted, manifested a flippant behavior and altogether acted like an alcoholic. Another of his patients, after 5 grain (0.324 gm.) doses of phenobarbital regularly, had the feeling as though she had imbibed a glass of whisky. A praecox patient, after receiving the equivalent of 6 grains (0.4 gm.) of phenobarbital for sleeplessness, became excited, got out of bed, threw about his clothes, and behaved as a drunken man. The same author observed a measles-like rash in four cases, which disappeared in from six to eight days after the administration of the remedy had ceased. He also observed vertigo of an alarming type in one case.

Deist,[7] von Klebelsberg [8] and Fuchs,[9] in 1914, all warned against the indiscriminate use of phenobarbital because of the toxic effects produced by large doses. Ungar,[10] in 1914, reported a most interesting case of phenobarbital poisoning after the administration of 45 grains (2.9 gm.). In that case there was complete loss of consciousness, areflexia, Cheyne-Stokes' respiration, absent pulse, limp paralysis of the extremities, blindness, contracted pupils with sluggish light reaction, vertigo, vomiting, rash, paralysis of the bladder and rectum, aphasia and convulsions. The patient recovered in twenty-five days. In 1914, Christinger,[11] as did Foley, in 1921, stated that in her opinion the suppression of the motor manifestations in insane epileptics has an unfavorable effect on the psychic outbreaks of the patients. Many are worse, and attacks occur more frequently. Curschmann [12] and Strauss [13] each reported on several cases of phenobarbital exanthems, which they describe as resembling measles more than scarlatina. There was desquamation in one of Strauss' cases; of the other cases, two were of cardiac or renal type, and in his remaining two cases there was an elevation of temperature. Phillips [14] reported a case of his own under the title of phenobarbital poisoning, and cited some of the newer literature on phenobarbital poisoning to which the reader is referred. In his case the course was similar to that of measles, with high temperature, sore throat, severe gastro-intestinal disturbances, rash, desquamation, etc., but there was also nephritis. This author in his conclusions states that the drug should be administered with great care—a statement which everybody will accept; also that patients should report to their physician on the first appearance of a skin rash or of any untoward symptom, and should immediately stop taking the drug. However, experience prompts me to take exception both to premise and conclusion of the following paragraph:

> Since there is little difference between the therapeutic and fatal dose, phenobarbital should not be prescribed in single doses of more than 1½ grains (0.1 gm.), and not more than 3 grains (0.2 gm.) should be taken in twenty-four hours.

There is a vast difference between the therapeutic and the fatal dose. In treating the insane it has often been necessary to give for short periods of time 3 to 5 grain (0.195 to 0.324 gm.) doses of phenobarbital daily, either to subdue maniacal attacks or to produce sleep—and I have encountered no ill effects from its use. In the treatment of epilepsy I have occasionally given 3 and 3½ grains (0.195 and 0.23 gm.) of phenobarbital three times daily without the slightest ill effects, toxic symptoms or fatalities. As for the same author's admonition to examine the urine of patients taking phenobarbital once or twice weekly, I regard this as a luxury, not a necessity. My ambulatory patients are seen only once a month, and urinary examinations are made occasionally. Thus far I have not seen a case of nephritis following the administration of phenobarbital.

SUMMARY

The best results from phenobarbital were obtained in cases of grand mal, and in petit mal when there was a motor element in the attacks. Less benefit was observed in the cases characterized by isolated petit mal attacks, and least of all in those with numerous petit mal attacks. When the sensory and psychic components predominated in the seizures, reduction of attacks was the rule, while complete cessation for long periods was the exception. The feebleminded epileptic was greatly benefited by treatment with phenobarbital, provided the drug caused a cessation of convulsions. Psychic epilepsy is favorably influenced by phenobarbital if the psychic outbreak is the consequence of complete or incomplete convulsions. The efficacy of phenobarbital in the epileptic insane has not been proved, as of the four equally competent authorities, two are extremely optimistic, while the other two have assumed a forbidding attitude toward phenobarbital. Perhaps further proof will be forthcoming from our large colonies for epileptics to decide this question for us.

Regarding the so-called toxic effects from phenobarbital, the number occurring in my series was small compared with the total number (200) under observation, namely, a dozen cases, and these were rather mild compared with those reported in the literature. There were no fatalities from phenobarbital in my practice, and I believe that the danger, though a real one, has been greatly exaggerated.

5. Emanuel, Gustav: Neurol. Centralbl. **31**: 563, 1912.
6. Patschke, F.: Neurol. Centralbl. **31**: 899, 1912.
7. Deist, H.: Sommer's Klinik f. Psych. u. Nervenkrankh. **8**: 1, 1913.
8. Von Klebelsberg, Ernst: Psych. neurol. Wchnschr., 1912, p. 415; Neurol. Centralbl. **32**: 193, 1913.
9. Fuchs: Neurol. Centralbl. **33**: 128, 1914.
10. Ungar: Wien. klin. Wchnschr. **27**: 847, 1914; Neurol. Centralbl. **34**: 68, 1915.
11. Christinger, Minna: Neurol. Centralbl. **33**: 760, 1914.
12. Curschmann: Therap. Halbmonatsh. **31**: 148, 1917.
13. Strauss: Therap. Halbmonatsh. **31**: 338, 1917.
14. Phillips, John: Phenobarbital (Luminal) Poisoning, J. A. M. A. **78**: 1199 (April 22) 1922.

The bromids have been entirely displaced by phenobarbital in my management of epilepsy, although the former drug still finds a place when phenobarbital is not well tolerated.

In a general way I have adhered to the dietary rule of not permitting red meats, but I do not insist on a restricted or salt-free diet, as I formerly did when using bromids.

The doses of phenobarbital varied from 1½ grains (0.1 gm.) daily to from 9 to 10 grains (0.6 to 0.65 gm.) daily. The last doses were administered in few cases and then only for short periods of time, while in the majority of cases from 2 to 3 grains (0.13 to 0.195 gm.) of phenobarbital constituted the average daily dose.

I can report no cures. Knowing that phenobarbital is only a symptomatic remedy, I am loath to withdraw it altogether even from patients who have remained free from attacks for from five to seven years.

Parenthetically, I may state that my confidence in the efficacy of phenobarbital as an antiepileptic remedy has caused me to utilize it as a therapeutic test in two of my cases. One was a case of true somnambulism occurring monthly or bimonthly, without a history of epileptiform attacks. Phenobarbital in 2 grain (0.13 gm.) nightly doses at once caused the cessation of sleep walking, which has not recurred during the entire period of its administration (one year). Another case in which phenobarbital acted in the double rôle of therapeutics and diagnosis is the following: A schoolgirl, aged 13, developed peculiar motor spasms during which there was tetanoid contraction of the upper and lower extremities. Soon after the administration of average doses of phenobarbital there were no more attacks, and the patient believed herself cured. Then followed another attack, phenobarbital was resumed, and there have been no attacks since (fourteen months).

COMMENT

It will be observed that the best results from phenobarbital were obtained in those forms of epilepsy which are accompanied by convulsions, namely, the grand mal variety, while less brilliant results were seen in the so-called petit mal attacks and in the psychotic outbreaks. I believe that the explanation will be found in an analysis of the epileptic attack itself. Each convulsion, either major or minor, reveals two components in different proportions: (*a*) the motor element, and (*b*) the sensory element in a broad sense, which includes the psychic. The efficacy of phenobarbital—an anticonvulsive remedy—increases in proportion to the predominance or not of the motor element in a given attack; hence the splendid effects in grand mal and in those cases of petit mal with motor manifestations. And for the same reason phenobarbital is less effective in the sensory losses or so-called "absences" of petit mal epilepsy. In other words, the greater the motor upset, the more effective is the remedy, while sensory and psychic upheavals are benefited only secondarily. With this in mind we can also understand why the mentality of epileptics taking phenobarbital is improved. It appears that mental deterioration in the epileptic largely depends on the disturbances of the cerebral circulation by repeated attacks acting mechanically or through the vasomotor mechanism. The prevention of frequent mechanical insults is an indirect means of mental improvement; and epileptic dementia, in many cases really bromid depression, rapidly disappears under phenobarbital medication. The effect may even be greater than anticipated, for many patients, especially early in the treatment, appear somewhat exalted. Epileptic dementia consists for the most part of apathy, lack of concentration and general mental inertia with memory losses. After inhibiting attacks, the patient becomes more animated in his conversation and more active physically, the characteristic facies and gait of the epileptic disappear, and he again appears as a normal individual.

Whether the explanation given is correct or there is some other, the fact remains that the patient's mentality is often improved after the successful administration of phenobarbital, as was shown not only in the normal epileptics, but also in the defectives under my observation.

CONCLUSIONS

1. Phenobarbital is the most effective symptomatic remedy in the management of epilepsy.

2. The best results are obtained in the convulsive types of the disease—both grand mal and petit mal, with effects that are almost specific. The sensory and psychic forms of epilepsy are greatly benefited, if not by cessation then by reduction of seizures.

3. There has been no mental deterioration from the administration of phenobarbital; on the contrary, patients have become more alert and keen, have lost their unnatural reticence and the fatuous, acne-marked facial expression previously the sign of an epileptic.

4. Phenobarbital, when taken over many years, neither causes damage to the viscera nor results in habit formation.

5. Large doses are mainly responsible for the so-called toxic and by-effects.

6. The art of administering phenobarbital consists in finding a dose suitable to each case without the production of unpleasant by-effects. One should begin with average doses of from 1½ to 2 grains (0.1 to 0.13 gm.) of phenobarbital daily, and "feel" his way up or down the scale until results are obtained. Large doses should not be resorted to unless the smaller ones prove ineffective; and even then there should be a gradual return to smaller doses.

7. An indiscriminate use of phenobarbital is fraught with danger and is certain to bring discredit on the most valuable antiepileptic remedy in our therapeutic armamentarium.

25 East Washington Street.

ABSTRACT OF DISCUSSION

Dr. David S. Booth, St. Louis: I have twice had the privilege of discussing a paper by Dr. Grinker on the use of phenobarbital. On those occasions, Dr. Grinker seemed to be more optimistic as to the results of this treatment, and I disagreed with him. I can more fully agree with him at this time. In those previous discussions I mentioned what Dr. Grinker has here brought to our attention, the ill effects of phenobarbital, and especially the causing of drowsiness. I have had it cause drowsiness to such an extent that the patient could not attend to business, and yet it did not control the attacks. In those cases in which phenobarbital fails, or in those cases in which it has been given at all, has it been Dr. Grinker's experience that the bromids then will not be of any benefit? I have heard or read such an opinion, and if Dr. Grinker has had any experience in this line, I would ask what his observation has been.

Dr. F. E. Coulter, Omaha: In the last eight years I have found phenobarbital a very effective remedy, in many cases far superior to the bromids, and with many of the objection-

able features of the bromids eliminated. If Dr. Grinker will add to the use of phenobarbital the removal of the causes of epilepsy, which produce the syndrome, or whatever they wish to call it, I think he will then cover the field of treatment quite well.

DR. A. L. SKOOG, Kansas City, Mo.: I wish to subscribe to what Dr. Grinker said respecting his further experience in the use of phenobarbital in the treatment of epilepsy. He is right in warning about observation when starting the patient on the treatment. Perhaps even closer observation is demanded with this drug than with bromid therapy. I will cite one case illustrating this point. A healthy, robust girl, aged 15, weighing 140 pounds, had had bromid therapy without any result. I placed her on 1 grain (0.065 gm.) doses of phenobarbital, given but once a day, in the evening. After the third or fourth dose the patient was extremely drowsy and apathetic. It was evident that she suffered from toxic manifestations.

DR. E. T. PONDER, Little Rock, Ark.: We have used phenobarbital at the state hospital in Arkansas for several years with satisfaction. Dr. Grinker did not mention the treatment of status epilepticus. In this we use a solution of phenobarbital sodium, approximately 5 grains of the drug to 20 minims of the solution. We give this in conjunction with the bath or cold pack. Since instituting that treatment we have never lost a case of status epilepticus.

DR. CHARLES R. WOODSON, St. Joseph, Mo.: In regard to the treatment of status epilepticus, for seventeen years I had charge of the state hospital and since then of a sanatorium, and my treatment in the cases mentioned has been from 60 to 80 grains (4 to 5.3 gm.) of bromid, and I have not lost a case and have not failed to relieve the condition, except in a very few cases.

DR. JULIUS GRINKER, Chicago: Dr. Booth is right—the bromids seem to lose effect after the unsuccessful administration of phenobarbital—a statement I made in my first paper. In two or three cases I have suggested a return to the bromid, and the patients regularly requested to be put back on phenobarbital. In some cases not responsive to the phenobarbital treatment, I have discovered a way out of the difficulty, and that is, I combine the bromid with phenobarbital in one prescription. I believe that in this way one may gradually return to the bromids. However, before giving a patient phenobarbital I make sure that the bromids have not been successful. During the last two or three years I have used little or no bromid. In regard to toxic doses, before taking up phenobarbital therapy in any case it is worth while to inform oneself as to what untoward effects may be expected from the use of this agent and watch the patient very closely. In the beginning of treatment I see the patients often and, after having settled on the dose, I ask them to return only once a month. I may also state that I have had a hard time keeping girls from marrying after having been on the phenobarbital treatment. It is wrong to advise marriage, because the patients are not cured. One can keep the patient feeling and acting as a normal person for years—something the bromids accomplish but seldom.

Mother's Milk.—All our science and all our art have not yet provided a substance so good as the mother's milk. Yet how little we know about it. I believe physiologists are not yet determined as to whether breast milk is really a secretion or not. Certainly we have no proved knowledge as to the cause of its sudden appearance in the breasts, and little knowledge as to the conditions controlling it either in quantity or in quality. Why is true milk never secreted as long as the child is in the uterus? After a woman has had a child, and has nursed that child, small quantities of milk frequently remain in the breasts, and may be expressed on pressure for months or years subsequently, but as soon as that woman becomes pregnant again, the milk disappears from her breasts once more. True, an oily fluid-colostrum appears in the breasts during pregnancy, but no true milk until some seventy hours after the infant's birth.—Johnstone, *Edinburgh M. J.*, May, 1922.

ANTEPOSITION AND RETROPOSITION OF THE UTERUS: INCIDENCE AND SYMPTOMS *

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ROCHESTER, MINN.

One thousand consecutive cases of unmarried women, aged from 15 to 45 years, who had no record of pelvic infection, pelvic tumor or pregnancy were studied to determine, if possible, the relative frequency with which the various displacements of the uterus and the attendant symptoms occur in cases in which no pathologic or physiologic factors could have affected the position of the uterus. Polak [1] says that one woman in every five has retroversion, congenital or acquired. The cases in this series represent the congenital type.

In the series of 1,000 cases, retroposition of the uterus was found during routine examination in 202 (20.2 per cent.); this indicates that the ratio of 1 to 5 is constant in the congenital type. The diagnostician is often puzzled by the fact that the general examination of a patient may disclose a retroverted or retroflexed uterus without a history suggestive of a pelvic lesion, and the next patient examined with the same condition of the pelvis may have dysmenorrhea and backache, for which she is seeking relief. Often patients with dysmenorrhea, backache and constipation, whose uteri have been restored to the normal position by surgical measures, still complain of the same symptoms, showing that in many cases the position of the uterus is only one etiologic factor.

When the uterus is in normal position, the ligaments act merely as guy-ropes and not as means of suspension. The uterus is maintained in its normal position by (1) the proper tone of the anatomic supports; (2) the elasticity of the musculature of the uterus; (3) the intact pelvic floor, and (4) the intra-abdominal pressure, which serves to keep the anterior wall of the uterus in contact with the bladder. Backward rotation or prolapse of the uterus occurs when these factors fail to exert their normal influence. The organ is necessarily mobile. By manipulation it can be rotated posteriorly through an angle of 180 degrees and laterally through an angle of 45 degrees, but under normal conditions it returns to its proper position after the temporary displacement.

Graves [2] says that the relaxation of the pelvic supports, with consequent permanent retroversion, is not the result of ordinary falls or injuries. In the normal woman, nature has provided for accidents of this kind, and unless the bladder is greatly distended the sudden increase of abdominal pressure serves only to force the uterus into anteposition. Displacement of the uterus, which would remain an abnormal displacement as the result of trauma, would mean the rupturing or tearing of its normal supports with the usual symptoms of an acute condition in the abdomen.

In the true congenital cases of retroversion the fetal type persists, the axis of the organ is perpendicular and the intestine fills the uterovesical space. It is reasonable to assume that the second and third degrees of

* From the Section on Medicine, Mayo Clinic.
* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

1. Polak, J. O.: Acquired Retrodisplacements of Uterus, New York M. J. **111**: 89 (Jan. 17) 1920.
2. Graves, W. P.: Gynecology, Philadelphia, W. B. Saunders Company, 1916.

retroposition are the result of continued intra-abdominal pressure during childhood and early adult life.

It is often noted that congenital retroposition per se does not give rise to symptoms; our statistics confirm this, but symptoms complained of in the acquired type, in which the retroposition was first noticed following infection, childbirth or the development of a tumor, are more common in the cases of congenital retroposition than in the cases of anteposition.

The patients in this series came to the Mayo Clinic because of a variety of complaints, and were subjected to general examination regardless of the nature of their diseases. In many of the records studied, no distinction had been made between retroversion and retroflexion, or between anteversion and anteflexion; therefore, the inclusive terms anteposition and retroposition are used.

RECORD OF ONE THOUSAND CONSECUTIVE CASES OF MALPOSITION OF UTERUS IN UNMARRIED WOMEN

	Uterus Normal or in Anteposition		Uterus in Retroposition	
	No.	Percentage	No.	Percentage
Regularity of menstruation mentioned by	787	98.6 of 798	202	100.0 of 202
Regular menstruation	641	81.44 of 787	157	77.72 of 202
Irregular menstruation	146	18.55 of 787	45	22.27 of 202
Character of menstrual flow mentioned by	488	61.1 of 798	129	63.8 of 202
Moderate flow	289	59.22 of 488	72	55.81 of 129
Scant flow	109	22.33 of 488	26	20.15 of 129
Profuse flow	90	18.44 of 488	31	24.03 of 129
Dysmenorrhea, Grade 3 or 4	102	12.8 of 798	33	16.33 of 202
Backache during menstrual periods	58	7.26 of 798	23	11.38 of 202
Intermenstrual backache	67	8.39 of 798	27	13.36 of 202
Intermenstrual pelvic pain	16	2.0 of 798	11	5.44 of 202
Headache during menstrual periods	36	4.51 of 798	11	5.44 of 202
Intermenstrual headache	221	27.69 of 798	71	35.14 of 202
Leukorrhea	127	15.91 of 798	50	24.75 of 202
Nervousness	265	38.22 of 798	78	38.61 of 202
Constipation	272	34.08 of 798	77	38.11 of 202
Irritation of the bladder	54	6.76 of 798	15	7.42 of 202
General condition mentioned by	723	90.6 of 798	202	100.0 of 202
General condition, good	300	41.49 of 723	110	54.45 of 202
General condition, fair	376	52.0 of 723	81	40.1 of 202
General condition, poor	47	6.5 of 723	11	5.44 of 202
Operation advised	6	0.75 of 798	3	1.48 of 202
Dilatation and curettage for dysmenorrhea advised but not urged	4	0.51 of 798		
Number of patients (total, 1,000)	798	79.8 of 1,000	202	20.2 of 1,000
Average age of patients		25.87 years		26.7 years
Average age when menses began		13.85 years		14.18 years

In the series of 1,000 patients, anteposition, probably the normal position in most cases, occurred in 798 (79.8 per cent.) In view of the fact that the infantile type of uterus with which one expects to find delayed menstruation is more often in the anteposition, it is of interest that in these cases menstruation was established at the average age of 13.85 years, and in cases of retroposition, at the average age of 14.18 years.

Dysmenorrhea occurred in 102 (12.8 per cent.) of the patients in whom the uterus was in anteposition, and in thirty-three (16.33 per cent.) of patients with retroposition. Only patients who complained of severe pain, Grades 3 or 4, were listed as having dysmenorrhea.

Seven hundred and eighty-seven of the 798 patients with anteposition mentioned periodicity of menstruation. One hundred and forty-six (18.55 per cent.) of the 787 menstruated irregularly, and forty-five (22.27 per cent.) of the 202 with retroposition menstruated irregularly. Four hundred and eighty-eight of the patients with anteposition and 129 patients with retroposition mentioned the character of the flow. The menstrual flow was scant in 109 patients (22.33 per cent.) with anteposition, and in twenty-six (20.15 per cent.) with retroposition; the menstrual flow was moderate or normal in 289 patients (59.22 per cent.) with anteposition and in seventy-two (55.81 per cent.) with retroposition. On the other hand, profuse menstrual flow was recorded in the histories of ninety (18.44 per cent.) with anteposition, and in the histories of thirty-one patients (24.03 per cent.) with retroposition, probably because of passive congestion.

Backache was not a common complaint. It occurred during menstruation in only 7.25 per cent. of the 798 patients with anteposition, and in 11.38 per cent. of the 202 patients with retroposition. Intermenstrual backache occurred in 8.39 per cent. of all the patients, although the ratio remained the same in retroposition and in anteposition.

None of the 1,000 patients had marked leukorrhea; it was mentioned in the history of 15.91 per cent. of the patients with anteposition and in the history of 24.75 per cent. of the patients with retroposition. It was difficult to correlate nervousness, constipation and general debility with the pelvic findings, as these three symptoms depended largely on the complaints for which the patients came to the clinic. Some came because of hyperthyroidism, and many came because of postinfluenzal debility. Only about 7 per cent. of all the patients had irritability of the bladder; it was slightly more frequent in the patients with retroposition.

Operation for pelvic complaints (practically always dysmenorrhea) was advised for only six (0.75 per cent.) of the patients with anteposition, and for three (1.48 per cent.) of the patients with retroposition.

Many of the patients with retroposition have other evidences of deficient tissue-supporting strength, such as scoliosis, enteroptosis and poor muscular development. Unfortunately, surgery seldom affords relief in these cases, as the uterine displacement is simply one expression of subnormal muscular development and often of endocrine dysfunction. These patients require careful analyses and, usually, readjustment of their habits and living conditions.

Certain patients with retroposition who seek relief from dysmenorrhea are apparently well-developed, healthy women. In this group, if the pain occurs before the flow is well established, and is relieved after it becomes free, the outlook for relief is good after proper correction of the displaced organ.

CONCLUSIONS

1. Uncomplicated retroposition of the uterus occurs in 20.2 per cent. of unmarried women.

2. The age at which menstruation becomes established is practically the same in women with anteposition and in those with retroposition of the uterus.

3. Dysmenorrhea is about 1.3 times as common in women with retroposition as with anteposition.

4. Patients with retroposition had intermenstrual backache slightly more often than those with anteposition.

5. There seems to be little difference in the character and incidence of symptoms as a whole in cases of anteposition and in cases of retroposition of the uterus.

6. Congenital retroposition of the uterus, associated with backache, dysmenorrhea and so forth, usually is part of a general picture of deficiency of development.

7. Surgical procedure to relieve pelvic symptoms in uncomplicated cases should be advised only after careful study of the patient from the point of view of the general, as well as the gynecologic, condition.

FREQUENCY AND CLINICAL SIGNIFICANCE OF DISPLACEMENTS OF THE UTERUS *

PALMER FINDLEY, M.D.
OMAHA

In my effort to determine the clinical significance of displacements of the uterus, I have culled from 3,763 gynecologic records 480 cases of retroversion and retroflexion, and to this number I have added seventy cases of prolapsus, making a total of 550 displacements, or approximately one displacement in seven gynecologic cases as they have occurred in private practice.

No forward or lateral displacements of the uterus are considered, for the reason either that they are congenital and in themselves are symptom free, or that they are dependent on encroaching lesions which directly lead to the displacement.

In the preparation of this report, I divested myself of all preconceived prejudices and have let these records speak for themselves, without regard for the voluminous literature that has accumulated on the subject.

For the purposes of this analysis, it is assumed that prolapsus is but the end stage of retroversion and as such may properly be incorporated in the consideration of retrodisplacements. Indeed, it may be well contended that an uncomplicated retrodisplacement is of no clinical significance save that of the first step in the development of prolapsus. It is my impression that gynecologists are fairly well agreed that uncomplicated retrodisplacements of the uterus give rise to no symptoms and deserve no consideration at the hands of the surgeon. This statement may be qualified in reference to sterility, which, for mechanical reasons, is influenced to a limited degree.

For generations, women have been led to believe that displacements of the uterus give rise to all manner of local and general disturbances, and now, when informed by a physician that the "womb is out of place," they are disposed to rationalize all complaints on the basis of the displacement.

Furthermore, it is obvious from a perusal of our modern textbooks that the medical student and general practitioner are too often misled by the elaborate symptomatology credited to uterine displacements. Under the caption of retrodisplacements of the uterus, we often find an astounding array of symptoms: sterility, leukorrhea, dysmenorrhea, backache, pain in the sides radiating to the thighs, bladder and rectal disturbances, constipation, anemia, loss of flesh, general fatigue, nervousness and what not. Then, by way of apology, the assertion is usually made that these symptoms are often due to complicating lesions in the pelvis. Would it not be better to say in unmistakable language that retroversions and retroflexions of the uterus do not in themselves cause symptoms and that they are of no clinical significance in the absence of descent of the uterus; that the pelvic symptoms complained of are chargeable to associated lesions within the pelvis, and that, in the absence of pelvic lesions other than the backward displacement, we must look for more remote factors to account for the pelvic disturbances?

It is imperative that these patients should be examined not only for static faults but also for physiologic disturbances of organic balance. A backward displacement or prolapse of the uterus accompanied by backache too often elicits ill-timed advice for operation without consideration for their static alinement. As Lowman has recently said, "The reason that so many chronic cases stay chronic is largely due to the fact that they are not completely gone over and all the points of nerve leakage ascertained."

Have we not all observed cases in which retrodisplacements give rise to no pelvic disorder until, through suggestion, the displaced uterus becomes a pain-pathway for neurosis in a woman who has acquired nervous instability from overstress?

Theilhauber, in 1895, opened the way for acceptance of this point of view when he said that the symptoms commonly referred to retrodisplacements were in reality due to other conditions associated with the displacement and that the displacement should be regarded as an accidental accompaniment. Schroeder found retroversions in 25 per cent. of medical cases in which there were no pelvic symptoms.

Of the 480 retroversions and retroflexions, twenty (4 per cent.) were uncomplicated. No postmenopausal cases were included among the uncomplicated cases, it being assumed that an uncomplicated retroversion is physiologic in the senile stage. Of the twenty patients having uncomplicated cases, fifteen had borne children. The average age was 28 years. Nervousness was the dominating factor in all these cases. In the case of two patients who were operated on, one later gave birth to a baby after a long period of sterility, and the other was relieved of her pelvic complaints. I cannot refrain from expressing the wish that my nonoperating record in this class of cases had been 100 per cent., notwithstanding the fact that results seem to have justified the operations. Five of these patients complained of backache in the menstrual period, two of pelvic pains, four of leukorrhea and three of sterility. But the outstanding clinical phenomenon in the twenty uncomplicated cases was nervousness—they all had a pelvic squint.

Turning now to the complicated cases of retroversion and retroflexion, I find 460. Only cases were included in which operation had been performed, together with a lesser number in which there was no operation but in which the accuracy of the anatomic findings on the examining table could be reasonably relied on.

It appears from the records that in almost all instances the indications for operation rested on the complicating pelvic lesions and not on the displacement of the uterus. With these 460 case records all carefully charted, it was convincing and enlightening as demonstrating how it was almost uniformly possible to ascribe the various symptoms to the one or many associated lesions in the pelvis without incriminating the displaced uterus. Most difficult of all was the accounting for backaches in the absence of any demonstrable pathologic condition within or behind the uterus. Many such backaches were ascribed to faulty posture, the result of a relaxed abdomen; or to a tilted pelvis, the result of fatigue attitude. As secondary considerations may be mentioned faulty foot mechanics, sacroiliac relaxation and focal infections. Failing in all these to find a satisfactory explanation for the backache, there is the ever-present neurosis to fall back on. Chipman quotes La Rochefoucauld as saying: "Pain is the greatest liar in the world, but of all these painful

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liars we know that backache is the most Ananias—or Sapphira." Backache is indeed a vexed problem—one that it is difficult to classify and even to localize, and yet it is the most common complaint of women. For my part, I do not believe an uncomplicated retrodisplacement causes backache. It is only when the uterus begins its descent through the pelvis that it may be said to cause backache.

We have heard much of congestion of the uterus as the direct result of retrodisplacements, and this alleged congestion is held accountable for menorrhagia, dysmenorrhea and leukorrhea. A study of my case records convinces me that these symptoms are more satisfactorily accounted for by the presence of morbid changes in the uterus and adnexa.

In a total of 395 retroversions and retroflexions, 134 (34.15 per cent.) were in nulliparas, of whom sixty-four were married and seventy single. In the twenty uncomplicated cases, there were sixteen married women, and but one of this number was sterile. In 375 cases of retroversion associated with various pelvic lesions, sixty-five married women were sterile—a percentage of 17.3. In eighty-six cases of retroflexion with associated pelvic lesions, fourteen of the married women were sterile—a percentage of 16.2 as compared with 6.25 per cent. of sterility in the twenty uncomplicated cases of retroversion and retroflexion. This leads me to the conclusion that an uncomplicated backward displacement of the uterus has little or no influence on pregnancy; that when sterility exists we must look to complications both local and general for the underlying cause.

As for pressure symptoms referred to bladder, rectum and pelvic nerves, I can see no rational basis for assuming that a perfectly movable, normal uterus in retroposition can be held accountable. Whatever pressure symptoms may exist are due to gross pelvic lesions associated with the displacement.

I have incorporated seventy cases of prolapsus in my series of displacements; sixty-eight of this number were in multiparas and two in nulliparas. Ten patients were in the postmenopausal state. In two, there was complete absence of symptoms. Fifteen of the seventy patients (21.4 per cent.) complained of menorrhagia—a proportion far exceeding that found in retrodisplacements, and for the reason that prolapsus is common to an age when myopathic hemorrhages most often occur. Backache was complained of in fully half the cases, and it was noted that backache was a more prominent symptom in prolapse of moderate degree than in procidentia. As in flatfoot, so in prolapsus uteri, there is greater strain on the supporting structures in the early stages of the descent.

A very moderate degree of descensus is not uncommonly associated with retroversions in nulliparas, but procidentia is rare in women who have not borne children. Two such cases are among the number recorded, a percentage of 2.85, which corresponds fairly closely with the figures of Weinberg, who found 3.45 per cent. of all prolapsus in infants and nulliparous women. It has been estimated that 86 per cent. of procidentia in the new-born is associated with spina bifida, and this does not reckon with cases of spina bifida occulta. In twenty-eight multiparous women with prolapsus, Ebeler found 23 (82.14 per cent.) with occult spina bifida. Various interpretations have been placed on the concurrence of spina bifida and prolapsus. Unquestionably, there is an element of infantilism in most if not all cases. One of my patients was an inmate of an institute for the feebleminded. Kepler collected the records of eighty cases of procidentia in nulliparous women, and thirty-eight were mentally defective. There is weakening of the supports of the uterus through defective innervation, coupled with the effects of intra-abdominal pressure; here we have the answer to the mechanism of prolapsus in the newborn and in nulliparous women.

CONCLUSIONS

1. An uncomplicated retrodisplacement of the uterus is of no clinical significance save that of a preliminary step in the development of prolapsus. This statement should be qualified in reference to sterility, which for mechanical reasons is influenced to a limited degree.

2. With the possible exception of sterility, pelvic symptoms are chargeable to associated lesions within the pelvis and to more remote factors.

3. Pelvic complaints are engendered by suggestion, and as a result of suggestion the displaced uterus becomes a pain-pathway for neurosis in a woman who has acquired nervous instability from overstress.

4. There were 480 retroversions and retroflexions, and only twenty (4 per cent.) were uncomplicated. The pelvic complications comprised the whole category of pelvic lesions.

5. The indications for operative intervention rested in the associated pelvic lesions and not in the displacement of the uterus.

6. It was not always possible to account for backache, and the correction of the displacement, together with the removal of accompanying pelvic lesions, did not always relieve the backache. Failing to find a satisfactory explanation within the pelvis for backache, rather than accept an uncomplicated retroversion or retroflexion as the causal factor, I have looked to faulty posture, the tilted pelvis from fatigue attitude, faulty foot mechanics, sacro-iliac relaxation and focal infection.

7. The popular idea that uncomplicated retrodisplacements of the uterus result in congestion of the uterus, which, in turn, causes such disturbances as leukorrhea, dysmenorrhea and menorrhagia, is not justified in fact. These symptoms are more satisfactorily accounted for by the presence of morbid changes in the uterus and adnexa.

8. Referring to the question of sterility in retrodisplacements of the uterus, I find: 6.25 per cent. sterility in uncomplicated cases; 16 per cent. sterility in complicated retroversions, and 25 per cent. sterility in complicated retroflexions. Here, again, it is evident that the associated pelvic lesions are largely responsible. The small percentage of sterility (6.25) in uncomplicated retroversion and retroflexion would indicate the comparative insignificance of the displacement as a factor in the causation of sterility.

9. Pressure symptoms referred to bladder, rectum and pelvic nerves are to be ascribed to the presence of gross pelvic lesions and not to the displaced uterus.

10. Prolapsus is the end-stage of retroversion. Seventy cases are included in my series of 550 displacements of the uterus. Two patients in these seventy cases were primiparas. Menorrhagia was found in 21.2 per cent. of the seventy cases. Backache was found in fully half of the cases and was more common in prolapse of lesser degree than in procidentia. Procidentia in nulliparous women is rare and is due to defective innervation coupled with the effects of intra-abdominal pressure.

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11. In response to the request of our secretary, I have endeavored to find in my records the answer to the following questions:

(*a*) What is the frequency in nulliparous women?

Answer: Retroversions, 169 (42 plus per cent.); retroflexions, twenty-nine (33 plus per cent.); prolapsus, two (2.85 per cent.).

(*b*) What is the frequency in women who have borne children?

Answer: Retroversions, 225 (57 plus per cent.); retroflexions, fifty-seven (66 plus per cent.); prolapsus, sixty-eight (97.15 per cent.).

(*c*) To what extent are symptoms chargeable to the displacement of the uterus rather than to the associated pelvic lesions?

Answer: An uncomplicated retroversion and retroflexion does not give rise to symptoms with the possible exception of sterility, and then to a limited degree. It is one thing to have symptoms referred to the uterus and quite another to have them emanate from the uterus. In prolapsus uteri, backache and a dragging sensation in the pelvis are symptoms directly chargeable to the displacement, as may be certain bladder and rectal disturbances.

(*d*) To what extent can tentative measures be relied on to bring the desired relief, either temporary or permanent?

Answer: It has not been my purpose to discuss treatment of these displacements. In a general way I will say that tentative measures have a very limited field of application, as the symptoms complained of are usually caused by associated pelvic lesions which, as a rule, call for surgical intervention. In prolapsus, the pessary has its place as a temporary expedient, but never as a permanent measure unless operative means are contraindicated. General hygienic measures and psychotherapy are not to be disregarded.

(*e*) How often do these symptoms call for operation?

Answer: Uncomplicated retrodisplacements never call for operation. Complicated retroversions and retroflexions may or may not call for operation. The indications for operation are supplied by the associated pelvic lesions and not by the displacement of the uterus. Seventy-six per cent. of my patients were operated on.

Prolapsus is preeminently a surgical lesion. Seventy-two per cent. of my patients were operated on.

670 Brandeis Theater Building.

Changes in the Endometrium.—Much research is now being devoted to the attempt to correlate the changes in the uterus with those in the ovary—a matter of very considerable difficulty when you consider the paucity of available human material in regard to which a sufficiently accurate history can be obtained. The series of changes in the lining endometrium of the uterus has been very fully worked out, and may now be said to be definitely established. There are four stages each month. There is first the stage of premenstrual congestion, followed in the second place by the stage of menstruation proper when bleeding takes place from the surface of the endometrium. This is succeeded thirdly by the postmenstrual stage of involution or repair, and that in turn gradually subsides into a fourth short quiescent or resting stage. Another premenstrual congestion then begins, and so on the cycle goes. The life history of the corpus luteum has also been mapped out into four stages, but not yet with quite the same degree of certainty. According to Fraenkel, Meyer and others, the stages are those of proliferation of the lutein cells, vascularization of the lutein layer, maturity of the corpus luteum, and lastly retrogression.—Johnstone, *Edinburgh M. J.*, May, 1922.

SO-CALLED TRAUMATIC DISPLACEMENTS OF THE UTERUS*

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The medical profession has been closely associated with the rapid industrial development of the United States during the last two decades—more closely than most physicians realize. Many great industries have awakened to the economic value of preserving their human machines. Formerly the human machine was used to the utmost, and, when broken, was thrown on the scrap heap; today, at least five states, as well as the federal government, have passed rehabilitation laws, with a view to salvaging the disabled employee and replacing him in industry as a productive unit of society. Forty-two states have passed employees' compensation laws; many of them are still inadequate, but all are for the purpose of paying the just claims of men disabled by their work. Thus the industrial world is filled with great medico-economic and medicolegal problems, whose solution depends primarily on the assistance of the leaders in the medical profession.

Industrial compensation commissions, state insurance commissions and the privately owned insurance companies responsible for the payment of claims against industrial and public utility corporations are all seeking the facts concerning many of the medicolegal controversies which in the past have been left for solution to the unscrupulous lawyer and to the even more unscrupulous profesional medical expert witness. All of us have decried the professional testifier to falsehood, but few of us have been willing to appear in court or before the industrial commissions to expose the falseness of his testimony.

This paper is presented in an endeavor: (1) to separate the true from the false claims for disability when uterine displacement is the alleged result of injury; (2) to point out the great responsibility assumed by a physician when he informs his patient that certain existing pathologic conditions are the result of injury, and (3) to attempt to clarify and simplify the facts concerning traumatic uterine displacements, with the hope that this section will take some action to inform the medical profession and the courts of the country concerning true and false claims.

There is a group of medicolegal entities which have occupied the attention of the courts in connection with accident cases during the last twenty-five years. Visceroptosis began to appear as a claim for damages in many personal injury suits, following Glénard's treatises on the subject twenty-five years ago; in time alleged visceroptosis was replaced by claims for damages due to so-called traumatic displacement of the kidney; this was followed in turn by coccygodynia. Most of these conditions gradually went out of fashion, and seldom appear today in declarations of injuries.

More recently, traumatic appendicitis, traumatic displacements of the uterus and traumatic hernia have been in vogue. The first two are beginning to show signs of going out of style; the last, traumatic hernia, bids fair to outlast all other claims of personal injury. New entities are appearing on the medicolegal horizon, and are rapidly increasing in popularity; for example, sacro-iliac separations and subluxations of the joints

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and spine. Anomalies due to the position when roentgenograms are taken and the various anomalies of the joints of the vertebrae, as well as lipping of the joint surfaces due to arthritis, furnish the pathologic background for many of these alleged claims.

FREQUENCY OF SO-CALLED TRAUMATIC DISPLACEMENTS OF THE UTERUS IN PERSONAL INJURY CLAIMS

In regard to the problem of so-called traumatic displacements of the uterus, specifically to retroversion, retroflexion and prolapse (the lateral and ante displacements are never claimed), from the answers to questionnaires sent to industrial commissions, to chief surgeons of railroad and street railway corporations and to insurance companies, it would appear that so-called traumatic displacements of the uterus are made the basis of personal injury claims sufficiently often to deserve our consideration.

One of the largest city railway companies informed me that this is a frequent cause for claims of personal injury, although not as frequent as it was five years ago. Another large street railway company stated that it had 500 such claims; another company replied that during the last ten years there had been approximately 100 such claims. Several chief surgeons of railroads replied that this was a very frequent cause of personal injury action. The insurance companies consulted likewise stated that traumatic displacements of the uterus were frequently claimed, and were among their most difficult cases to handle.

It is worthy of note that the public utility corporations, which have the public accident cases, were subject to lawsuits much more frequently than the industrial corporations; the cases of the former are tried in the courts before juries, whereas the latter are practically all adjusted before the industrial commision. We received the report that from ten to fifteen cases of this nature have been filed before the industrial commission of Ohio, about five before the Indiana commission and an average of about ten a year before the Illinois commission. Other commissions replied that a few such cases came before them each year. One large insurance company has paid out approximately $20,000 during the last year in the settlement of five so-called traumatic uterine displacement cases. These figures are sufficient evidence that this is a medicolegal problem of far-reaching economic importance, worthy of our consideration.

EFFECT OF TRAUMA

Are displacements of the uterus ever due directly to trauma, the result of accidents, as distinguished from trauma of parturition and instrumentation?

First, let us consider the answer to this question from an anatomic standpoint. For our purpose it is sufficient to explain that the uterus is a small, pear-shaped organ, weighing from 1 to 1½ ounces normally, embedded in its cervical portion in the strong pelvic floor, the pelvic fascia and the levator ani muscles making up the chief strength of this pelvic diaphragm and the body of the uterus suspended in the pelvis by the uterosacral and broad ligaments, as a part of a suspension bridge arrangement, more or less freely movable. The uterus is protected in front by the bladder, and moves backward as the bladder becomes distended. It is protected above and below by the intestines. It is partially surrounded, and greatly protected by a strong, bony framework—the pelvis.

In the majority of women the uterus lies in an anteverted or slightly anteflexed position. However, as Graves has pointed out, 16 per cent. of the patients having retrodisplacements, examined at the Boston Free Hospital for Women, had developed mental displacements. These are the so-called congenital cases. Other authorities have pointed out that retroposed and retroverted uteri frequently are normal conditions in many women. Sufficient evidence has accumulated to demonstrate that not all retrodisplacements are pathologic, and that many retrodisplacements exist without the knowledge of the patient, furnishing no symptoms, and discovered only on examination for other conditions.

All of us have marveled at the readiness of this little organ to return to its normal position, after it has been pulled down so that the external os appears at the vulva, in order that the cervix might be dilated or some other operation performed. Webster and Findley taught us always to examine the patient after completing the curettage to ascertain whether the uterus was in proper position. Occasionally the cervix hung low in the vagina and the fundus was retroposed, but, as a rule, when the cervix was released, the uterus drew up normally into the pelvis.

In many cases, just prior to operation, I have purposely endeavored to pull the uterus down and push it backward before I entered the abdomen. When it was exposed, in the majority of cases, it was lying in a normal position. However, in the cases of existing retrodisplacements, even though the fundus is manually pushed forward just prior to operataion, on entering the abdomen one sees that the organ has returned to its retroposition.

In addition to the demonstrated tendency of the uterus to remain in a normal position, provided its supports and ligaments have not been damaged by previous disease or by childbirth, great weight must be given to the fact that it continues to remain in its normal position even in the presence of severe crushing injuries to its strong bony surroundings, the pelvis. In my traumatic surgery, I have seen cases of fractured pelvis in women. In some of these I have seen the bladder ruptured, but in none have I ever seen a displaced uterus.

Dr. A. E. Halstead of St. Luke's Hospital, Chicago, whose experience in traumatic surgery has been very extensive, and who has seen many cases of fractured pelvis, makes the same statement. Dr. F. L. Gourley of Waukegan, Ill., has told me of two cases of crushing injuries to the pelvis, in one of which seven fractures were sustained, including the horizontal ramus of the pubis, and in the other four fractures of the pelvis, including the pubis. He examined the uterus in both of these cases immediately after the accident, and has examined both several times since; in neither case was there a sign of displacement of the uterus. One patient gave birth to a child within a year and a half of the accident. Numerous similar case records can be collected to prove that severe crushing injuries do not cause displacements of the uterus.

If trauma is the cause of displacement, one would expect to find torn and bleeding ligaments, lacerated and bleeding pelvic floor, and the uterus lowered by gravity because of the loss of its normal supports. Search of the literature and wide inquiry have failed to reveal such a case. Trauma as a cause for tearing away the supports of the kidney, resulting in displacement of that organ, is seldom mentioned today; likewise,

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traumatic displacements of the sigmoid flexure, of the intestines, of the stomach or of the spleen are rarely, if ever, heard of. All of these organs have weaker anchorage than the uterus. Why, then, should trauma so frequently be claimed as a cause of uterine displacements?

From the foregoing facts we must conclude that, from an anatomic standpoint, traumatic displacements of the uterus practically never occur.

ANSWERS TO QUESTIONNAIRES

Considering the question from the standpoint of the experience of many physicians, from fifty replies to questionnaires, and from inquiries made directly to a large number of physicians and surgeons, three opinions are formed.

Most of the general practitioners or family physicians replied that they had seen one case, or a few cases, which they thought were due to trauma, such as falling down stairs, falling on the buttocks and lifting heavy bodies. When questioned as to the condition of the uterus prior to the accident, none could tell whether or not it was displaced. Most of the physicians obtained the history of an accident which had occurred some time previously, but believed that they could trace the symptoms back to the accident. A few general practitioners, who grasped the medicolegal significance of the question, stated that they knew of no case which they could definitely ascribe to trauma. One reported an acute temporary displacement, followed by permanent relief of the symptoms after replacement.

Several gynecologists were questioned; most of them stated that trauma per se seldom caused displacement. Some stated that falls on the buttocks, heavy straining when the bladder was full and blows directly over the lower abdomen might cause displacement of the uterus. Dr. N. Sproat Heaney replied:

The cases of actual traumatic displacements of the uterus are extremely rare, but I have seen a few instances in my own patients, where I had examined the patient beforehand and subsequent to a fall, and found the uterus displaced. In all these instances the accident had occurred when the patient had a full bladder, and the trauma came when the uterus was halfway back, and it was easy to throw the uterus backward. In such instances it happens that if the patient is seen soon after the alleged accident, a simple replacement of the uterus is sufficient; other treatment is not required.

The cases of Dr. Heaney fall under the class which I will describe later as acute temporary displacements.

Many industrial surgeons, medical directors of casualty insurance companies, railway surgeons and surgical consultants of industrial compensation boards were questioned. All were emphatic in declaring that true traumatic displacements of the uterus never exist. One street railway surgeon said that he knew of many such claims, but of no veritable traumatic dislocation of the uterus.

Another surgeon replied that he had seen from eighty to 100 alleged cases, but none were actual traumatic displacements and, in a majority of cases, the person claiming the injury was a malingerer.

Dr. C. W. Hopkins stated that twelve patients had tried to put forth this claim, but none of the claims were authentic, and that in his entire experience he had seen no case of true traumatic displacement.

Dr. Samuel C. Plummer said:

The majority of cases of claims against the railway company have been due to the rough handling of trains, either by setting of the emergency brake or as a result of collisions or derailments, in which cases the patient is generally thrown against the back of the seat in front of her, receiving some violence to the upper part of the body—the chest, head or arms, but not the abdomen or pelvis. The usual history is that no complaint is made of any pelvic trouble until some weeks afterward, when, as a result of a pelvic examination by a physician, a displacement of the uterus is found, without, however, any signs of acute injury. I believe that traumatic displacements of the uterus are very rare, and that when they do occur, they are accompanied by immediate violent symptoms, such as extreme pain, local swelling and tenderness. I believe that the vast majority of these cases which are noticed after violence to some distant part of the body are old cases whose previous existence is either unknown or denied.

Dr. T. R. Fletcher, chief medical examiner of the industrial commission of Ohio, replied:

I wish to state that, so far as I am aware, the commission has never had a bona fide case, though from ten to fifteen claims have been filed with the commission in which it is alleged that displacements have occurred. Owing to the fact that before many juries lay testimony is accepted rather than medical testimony, and the additional fact that it is possible to secure medical testimony for almost any condition, the commission has been compelled to pay several claims.

Dr. C. M. Harpster replied that of approximately 500 such claims, he knew of no actual case of traumatic displacement of the uterus. Abnormal position in every case was due to other causes.

Dr. John J. Moorehead said:

I have seen female patients with all kinds of injuries due to all sorts of trauma, and never saw or heard of one who received an injury producing displacement of the uterus, even in the presence of such a marked injury as fracture of the pelvis.

One of the best known railway surgeons in the country replied that in more than 25,000 accident cases, he had never seen a true displacement, retroflexion, retroversion or prolapse. He said, in part:

Often when claimed, it does not exist. The claimant's physician too often makes the statement of displacement, and the fact is clung to by the individual and attorney. In one instance the claim of displacement was made and substantiated by three doctors. Between the time of the injury and the trial, the patient was taken with acute appendicitis, and admitted to my hospital service. At that time they did not know of my connection with the company, although I had a file on the case.

An appendectomy was performed; three disinterested surgeons were called into the operating room; by enlarging the incision, a normal placement was demonstrated. The claimant and her attorney were later so advised. The case never came to trial, but the attorney was very bitter because of the claimant's carelessness in securing the company's chief surgeon to operate on her diseased appendix.

Medical men all too frequently attribute symptoms to displacements and ignore other existing pathologic conditions. The diversified opinions of the physicians consulted can be explained by the varied professional interests of the different groups. The outstanding fact is that no one was able to report a true permanent displacement of the uterus which could irrefutably be ascribed to accident as the etiologic factor. The general practitioner, who had never thought of the medicolegal aspects of the case, thought he could trace the condition, by the history of the symptoms, back to an alleged injury. Frequently the patient dated her trouble from a certain injury, but neither she nor the physician knew whether or not the displacement was present prior to that date.

The gynecologists had been empirically taught, and had taught many students, that trauma, such as a fall on the buttocks, was a cause of displacements. Few of those consulted had ever thought of the medicolegal aspect of the problem. Today, with our younger medical men being confronted more and more with the industrial medical problems, the teaching of trauma as a cause of uterine displacements must be qualified and amplified extensively. The surgeons working in the industrial, railroad and insurance fields may be accused by critics of a too dogmatic attitude in saying that trauma can never be a cause of displacements. The field is practically a new one in the medical world. They have been in a position to study these cases at the time of the accident and later when the claim for the alleged injury has been made. New medical facts, which deserve consideration, are being presented more and more to the profession from this new field of medical economics.

VIEWS OF AUTHORITIES

In considering the subject, most authorities on gynecologic subjects mention trauma as a cause of uterine displacements. Webster [1] states that retrodisplacements and prolapse may be caused by sudden strains or falls, but gives no proof or examples.

Kelly mentions injuries as a cause, and then describes cases of acute retrodisplacements induced by violent exertion, falls, lifting heavy objects or going too long with a full bladder, characterized at the outset by symptoms "never before experienced and demanding prompt relief." Kelly recommends manual correction by "pushing the fundus upward and forward and, at the same time, pushing the cervix backward toward the sacral hollow—under light anesthesia; rest in bed for two or three days." He states that reposition in recent cases practically always remains permanent. In old cases the displacement recurs shortly. Recurrence, therefore, speaks for previous existence of the condition.

Shoemaker describes two cases of acute or sudden retrodisplacement of the uterus, which remained below the promontory of the sacrum until released.

Hewitt [2] says that in fifty-eight cases of backward displacement in virgins, twenty-eight traced the symptoms back to a severe fall or strain, but he does not describe facts which prove the assertion. Hart and Barbour state that a sudden or violent blow may be a cause of retroversion, but that it would be a very difficult cause to establish.

Fleming [3] says, "Sudden increase of the intra-abdominal pressure as an actual cause is never responsible per se for uterine displacements."

Bacon [4] described three cases of sudden traumatic displacement of the uterus, two in virgins and one in a multipara, all due to falls with heavy blows over the lower abdomen, all developing immediate acute symptoms and all relieved by reposition of the organ by manual manipulation under anethesia and rest in bed for a few days.

Lewis [5] states that sudden increase in the intra-abdominal pressure because of injury, in a woman whose pelvic floor was already weakened, might cause the pelvic contents to be forced nearer to the pelvic outlet. Such a case of alleged traumatic displacement of the uterus would truly be a case of acute increase of a pelvic hernia.

Sims,[6] a pioneer in gynecology, describes a case of acute retrodisplacement of the uterus. In fact, he states that it was this case which first gave him the idea of ballooning the vagina with air in order to expose and operate on vesicovaginal fistula. The woman had fallen from a horse. She was in great agony at once, and Dr. Sims was called. The fundus of the uterus was retroverted and exceedingly tender. By placing the patient in the knee-chest position, he tried manipulation. Suddenly the fundus moved forward, the vagina became dilated so that he could plainly see within, and the patient said, "Why, Doctor, I am relieved."

It is evident that many authorities agree that acute sudden displacements due to trauma do occur, are easily relieved, and cause only a few days of disability; but none give definite reports of trauma causing permanent uterine displacement.

In my own experience, which includes seven years as an instructor in gynecology at Rush Medical College, nine years as chief surgeon of a large industry which had more than 6,000 female employees, and several years in general surgery with an extensive traumatic service, I have never seen a true case of traumatic displacement of the uterus. I have seen several alleged cases, but none of these could withstand careful investigation.

I recall a dispensary patient, a scrubwoman, who asserted that she had slipped and fallen while carrying a bucket of suds the night before. She had a partial prolapse and a history of several children, one to three days' postpartum rest in bed, and then early return to hard work. Examination revealed a relaxed abdominal wall, an old laceration of the perineum with a cystocele and rectocele, and a uterus which was enlarged, retroverted and partially prolapsed. The fall was not responsible for the condition. The patient was the victim of circumstances—poor, too many children and too hard work.

A woman, aged 18, who for months had frequently reported for various ailments, but never on account of menstrual disturbances, one day fell down stairs while at her place of employment. She suffered contusion of the buttock and a strained back. The patient was recovering when the family physician saw her, heard her history of backaches and, without an examination, said that she had a fallen uterus. From then on, I had great difficulty with the girl. She developed dysmenorrhea, severe backaches and headaches and, as her physician said, "all the cardinal symptoms of displacement." An examination under gas revealed a normal uterus, normally situated.

Another woman, aged 33, single, fell from a step-ladder when it broke under her. She was examined several weeks later by a woman physician who reported the diagnosis as dislocated coccyx and a retroversion "due to the fall." The physician secured a lawyer and brought suit for $10,000 against the firm which sold the step-ladder. The patient and the physician refused to allow an examination. Finally the legal adviser of the firm agreed to settle the case, provided an examination by the woman physician, myself and a third physician disclosed the alleged disability. Examination under gas anesthesia revealed that the uterus was in

1. Webster, J. C.: Diseases of Women, Philadelphia, W. B. Saunders Company, 1907.
2. Hewitt, quoted by Hart and Barbour: Manual of Gynecology, Chicago, Chicago Medical Book Company.
3. Fleming, C. E.: Railway Surg. J., September, 1908.
4. Bacon, M. W.: Railway Surg. J., September, 1908.
5. Lewis, Henry: Railway Surg. J., 1909.
6. Sims, J. Marion: The Story of My Life.

normal position; the coccyx seemed to be in normal position, and this was confirmed by roentgen-ray examination. The woman physician frankly admitted that she had not had the opportunity of examining the patient so well before and therefore was mistaken.

On the other hand, I have had one case of a girl who fell down stairs and who was immediately in great pain. When I reached her home she was lying on the bed, pale and covered with a clammy sweat, moaning and crying with severe pain located in the rectum and the perineum. Examination revealed a retroverted, swollen and very tender uterus impinged under the promontory of the sacrum. By manual manipulation, with the patient in the genupectoral position, the fundus of the uterus was replaced and immediately the patient was relieved. After a few days' rest in bed, she returned to work. I was in touch with the patient for several years, and never knew her to complain of a recurrence of the condition.

CAUSE OF UTERINE DISPLACEMENT

As stated before, most authorities now definitely agree that a certain percentage of women have retrodisplaced uteri without any symptoms, and that in them it is apparently a normal condition. Retrodisplacements of the uterus may occur at any period in a woman's life, especially in the parous woman. The cause may be some condition occurring in the normal supports of the uterus, in the uterus itself or around the uterus in the abdominal cavity, as follows:

1. In the supports:
   (*a*) Lacerations of the pelvic floor.
   (*b*) Relaxed broad or uterosacral ligaments.
   (*c*) Relaxed abdominal wall.
2. In the uterus:
   (*a*) Inflammatory changes, adding to the weight of the organ.
   (*b*) Tumors.
   (*c*) Subinvolution, following childbirth.
3. Surrounding the uterus:
   (*a*) Inflammatory adhesions.
   (*b*) Tumors or other pressure from surrounding organs.
   (*c*) Increase in the intra-abdominal pressure owing to new growth, lessening the size of the abdominal cavity.

Without going into the etiology, it is sufficient for my purposes to point out that trauma is not responsible for any of these conditions.

With these causes existing, often unrecognized and unknown to the woman, trauma may occur and may cause some exaggeration of the condition with subsequent symptoms. Or a careless physician may examine the patient who is complaining of symptoms following an injury and, when he finds a displacement, he may ascribe all the symptoms to that condition when they may be due to causes remote from the uterus. In every case a careful study will reveal the chief cause of the displacement to be one of the foregoing preexisting conditions.

The one exception is the acute temporary displacement of the uterus which occasionally follows trauma. In these cases, as already pointed out, symptoms occur immediately after the trauma, the symptoms are severe, "such as the woman never experienced before," and the uterus can be replaced and remains replaced with complete relief of symptoms. These acute cases are not the ones, however, which cause medicolegal controversies.

In the average case in which personal injury of this nature is claimed, the accident is not serious. The claim of injury or the symptoms develop a considerable time afterward, a physician, purposely or innocently, diagnoses the condition and the so-called cause, and a lawyer takes charge and enters suit. The insurance company or the corporation frequently considers it cheaper to settle the case rather than to enter an expensive legal fight, thus perpetuating these false claims. The woman herself is not necessarily a malingerer, but may sincerely believe her physician and her attorney and may think the condition exists.

The absurdity of many of these claims is illustrated by the following cases:

A crowded elevator fell 1 foot. One woman passenger alone claimed injury. A few weeks later her lawyer brought suit for retroversion of the uterus as the result of the injury. The insurance company settled for $2,500.

A colored woman, struck by an automobile, suffered multiple contusions. Some time later she was operated on for a large cyst of the ovary and a retroversion. Claim was afterward made by her lawyer and substantiated by her physician that the retrodisplacement was due to the accident, and that the ovarian cyst was made worse by it. Legal action was instituted, and the case was finally settled by the insurance company for $1,500.

A married woman, a multipara, working at a machine, had considerable hair torn out by catching it in the machine. A year later a hysterectomy was performed for prolapse. Suit for $10,000 was started against the company on the ground that the fright and nervousness from this accident had caused marked wasting of the patient and this wasting was responsible for the prolapse. The woman was awarded several thousand dollars.

Many other such cases could be cited which have been settled, or in which compensation was awarded by the courts, for varying amounts, the total running into a huge sum.

CONCLUSIONS

1. Acute temporary displacements of the uterus may follow trauma, but the symptoms are so severe that relief is secured immediately, and the disability is only of short duration.

2. Permanent uterine displacements are never due to trauma per se.

3. Trauma may cause some exaggeration of an existing, unrecognized displacement, but careful study will demonstrate that the chief etiologic factors are some combination of the preexisting conditions.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. STACY, FINDLEY AND MOCK

DR. GEORGE GELLHORN, St. Louis: The first point in Dr. Findley's paper was that an acquired and uncomplicated retrodisplacement never caused symptoms and therefore required no treatment. That view has been maintained by a number of German writers who claim that retroflexion hardly ever causes symptoms and that only the accompanying complications produce the symptoms complained of. I differ from that view. I believe every acquired retroflexion of an uncomplicated type—for the complicated retroflexion, of course, must produce symptoms—sooner or later produces symptoms that need not always appear to the casual observer; nor need they appear for many years, but eventually they will appear. If one visualize what happens in retroflexion when the architecture of the pelvis is disturbed, one will, perhaps, agree with me that symptoms may eventually be expected. When the uterus falls in retroflexion, there is impairment in the circulation of the uterus, tubes and ovaries. While the arterial blood supply is not materially interfered with, the veins are obstructed to a certain extent. Eventually this venous stasis within the uterus will lead to an increased activity of the glands of the mucosa and to an increased

menstruation. It may lead to climacteric bleedings in women who for twenty years may not have shown other symptoms, and then it will suddenly explode in the form of dangerous hemorrhages. It will lead to an enlargement of the uterus, at first temporary and later permanent, which may, in turn, produce pressure and other symptoms. For that reason otherwise uncomplicated retroflexion is worthy of attention. The possible effect on conception and on the anatomy and function of the ovary need merely be mentioned. In order not to create a false and exaggerated attitude on the part of the patient, I am in the habit of keeping the knowledge of a retroflexion to myself; I replace the uterus and insert a pessary without letting the patient know about it, if possible. I believe, contrary to the usual opinion, that, in a certain number of uncomplicated acquired retroflexions, a pessary has not merely a palliative but a curative value. In regard to Dr. Mock's paper, I have been on the witness stand three or four times in damage suits in which women claimed to have retroflexion from a railroad wreck, and the like. In every instance I have emphatically stated that the accident had nothing to do with the retroflexion, yet, in every case, my side was defeated. The company had to pay. So these medicolegal questions are not always a matter of scientific knowledge but of the wisdom of the "twelve good men and true" who determine these things. But there are traumatic retroflexions, just the same. A young woman, an acrobat, during the performance suddenly experienced a sharp pain which immediately disabled her. I found an acute retroflexion. The uterus had been pushed down and squeezed in between the sacro-uterine ligaments. I lifted the uterus up, and she was immediately relieved. Will Dr. Mock tell us what he means by "temporary" displacement? A displacement of that sort will remain permanent unless the physician remedies it immediately.

Dr. P. B. Salatich, New Orleans: About four or five years ago, I made a study of the causes of pain below the umbilical line. I found more than twenty-two different reasons. Whenever we examine a patient complaining of pain in the back and find a retrodisplacement, for our own protection we ought to be careful in making a diagnois that the uterus is the sole cause of the pain in the back. Patients have had the uterus straightened out, and still they complain of pain in the back. I agree with Dr. Gellhorn as to disturbances in the circulation. One will find very few patients with a retrodisplacement, either in the young woman or the woman who has had children; but there is always some enlargement of the veins—varicosity of the veins of the broad ligaments and of the veins around the internal os. Why should there be pain in varicose veins of the legs and not pains in varicose veins of the pelvis? I believe that in many cases of retrodisplacement the pains are caused by the dilatation of the varicose veins of the pelvis. I have seen many fairly good sized blood vessels in the uterus, the broad ligament and behind the internal os. By merely turning the uterus around while doing other work, one will find that after five or ten minutes the veins have diminished materially. Now do some women suffer and others not? Probably some persons can stand pain better than others. It is a matter of temperament. Some women with retrodisplacement have all kinds of nervous manifestations. Correcting the malposition gives relief. Others will have the same condition and no nervous phenomena. Before operating for retrodisplacement with the hope of overcoming the pain in the back, we should insert a pessary. If the uterus remains in normal position, one has done what an operation would do. But if after two or three months the patient is complaining again of pain and the uterus is retroverted again, then one will cure the patient by operation.

Dr. Fred J. Taussig, St. Louis: Dr. Stacy's paper showed rather strikingly how difficult it is to ascribe any definite symptom or set of symptoms to uncomplicated retroversions. But Dr. Findley's figures show that few of these retroversions are uncomplicated. We should therefore consider the position of the uterus, not in itself as pathologic but as the producer and the predecessor, in a very high percentage of cases, of a pathologic condition, and consequently it is better to correct this condition than to wait until it has persisted too far, because the longer the patient has the misplacement, the denser the adhesions at the rectum and uterus; and the greater the pressure against the ovary, with the production of retention follicle cysts, the more pronounced do the symptoms become and the more difficult is it to obtain a satisfactory cure. I feel, therefore, that retroversion is potentially, even if it is not actually, a disease. What group of cases should be left untreated and what group should we treat? The congenital type, usually not an extreme retroverison but rather a slight bending backward of the uterus into the axis of the vagina, the type often found in a nullipara, should be left untreated, except when it has seemed to produce definite changes or is attended by definite changes in the ovary requiring surgical correction. The surgical treatment of retroversion in the virgin is virtually the only one seriously to be considered. The use of the pessary in the virgin is never justified. In women who have had children, however, and particularly in the months immediately following childbirth, the pessary is of the greatest value. I am daily astounded at the expression of the opinion that the pessary is a thing of the past. A frequent comment is that this was all right before the days of surgery; but now that one can operate and shorten the ligaments, why bother with these old fashioned methods? I think that the neurologist has taught us to be wary of too many surgical corrections of retroversions, and the pessary will, without operative shock, often effect a cure. The use of the pessary is not as simple as it sometimes appears. It would be well for us to train every student in the exact molding of the pessary, because the pessary, unless it is properly fitted, causes pressure on sensitive points and is going to be harmful rather than beneficial. If, on the other hand, it is carefully molded to fit the case, it will do the required work. In 60 or 70 per cent. of the cases it will permanently correct the retrodisplaced uterus.

Dr. Albert Goldspohn, Chicago: It is well for us to be reminded that sometimes apparently gynecologic symptoms arise from other sources. Retroversion of the uterus sometimes exists without having produced symptoms, but we are not warranted, for that reason, to call them not pathologic. Much depends on the structure, nervous organization and employment of a woman as to how soon such a retroversion will show its pathologic nature and require treatment. When complications have supervened, we term the retroversion pathologic and then we operate, both for the displacement and for the complications; while, logically, we may treat only the complications and not the displacement, if that is not pathologic per se. Such surgery would be so devoid of good results that it would not last long. How or why is real retroversion or flexion of the uterus pathologic? 1. Torsion and traction on the veins in the twisted broad ligaments induce a harmful trophic change in the uterus and the ovaries, analogous to that of varicose veins in a leg; and often a metritis or menorrhagia or leukorrhea that persists in spite of all other treatments, until the associated displacement is corrected, is an analogue of a varicose ulcer. 2. The retroverted uterus drags the ovaries down into the narrow part of the pelvic funnel, where they are traumatized by the variably filled ampulla of the rectum and the body of the uterus in every act of intra-abdominal pressure. This, together with the trophic evil mentioned, induces follicular cystic degeneration of the ovaries. 3. In retroversion, the more or less acute supporting angle which normally is formed by the long diameter of the uterus with the long diameter of the vagina, is lost. Closure of the vaginal lumen by normal impact of intra-abdominal pressure, transmitted through the anteverted uterus and the bladder, on the anterior vaginal wall, is lost; and there results the mechanism of a wedge sliding down a nearly parallel open tube. Pessaries will not actually cure retroversion in more than about 2 per cent. of ordinary cases, unless postpartum involution of the uterus and its supports is secured in a laborious course of treatment by large and gradually reduced pessaries, assisted by frequent and diligent use of the knee-chest posture, with close medical supervision, beginning from three to four weeks after labor. If the uterine supports are thus given an early and a continuous slack for about a year, the majority of such cases will be cured of displacement, in the absence of marked injury of the pelvic floor.

DR. HUDSON TALBOTT, St. Louis: Industrial conditions today are so materially different from what they were a few years ago that it behooves us to give careful study to the conditions which may be handled by the industrial commissions. Three choice diagnoses are assumed by the patient, the plaintiff and the lawyer. Those three are: traumatic hernia, retrodisplacement of the uterus, and sacro-iliac joint trouble. Perhaps the latter occupies the center of the field today. Nevertheless, retrodisplacement is a very frequent subject of complaint. Perhaps it never occurs. We are frequently confronted with the fact that women have a retrodisplacement and suddenly their symptoms develop. And if it happens to be at about the time they sustain an accident, the accident, of course, was in their minds its cause. But from the medicolegal standpoint we should be careful in making a diagnosis and report of examination. If the plaintiff's lawyer can get you to say that while in your judgment it is not due to the accident, it is possible for such a thing to occur, he has won his case. Therefore, we should be careful not to make such a statement unless we are thoroughly convinced. Be careful in your diagnosis and be positive in your statement.

DR. HUGO EHRENFEST, St. Louis: I think that all the speakers very clearly brought out the point that a retroversion of the uterus is not the important gynecologic disease that most of the practitioners believe it to be, a misconception which, as Dr. Findley correctly stated, is to a certain degree due to false teaching in most of our textbooks. The authors may have gone a little too far in denying all importance to the problem. Dr. Gellhorn seemingly puts himself in opposition to their views, but if I understood him correctly, he spoke only of acquired retroflexion or retroversion, which is quite a different problem. Dr. Stacy considered only the congenital type encountered in 1,000 unmarried women. Dr. Findley, on the other hand, spoke of married women, which probably means both congenital and acquired cases. Comparing Dr. Stacy's and Dr. Findley's figures, we can conclude that the acquired uncomplicated group is not a very large one. That brings us to the question of what a complication is. Possibly some of the cases that at one time seemed uncomplicated gradually become complicated. It is very difficult, in actual practice, to say whether a certain freely movable retroversion is complicated or not. Symptoms are not the deciding factor in determining a coexisting complication. Some patients know whether their movable uterus is forward or backward. Others have learned that the knee-chest position will throw the organ forward. Thus, we might have occasionally symptoms even in the uncomplicated movable retroversion. A study of the reappearance of menstruation after childbirth left no doubt in my mind that the retroverted uterus will cause an earlier appearance of menstruation. This phenomenon can be explained only by pressure exerted on the ovary. This, then, is a symptom of an anomaly. But does it call for the treatment of the malposition? A similar uncertain symptom is backache. In some cases we are not sure whether it is rheumatic, static, or due to retroversion or to other causes. The pessary is of great value in solving this problem. If a backache or any other important symptom is relieved by a pessary, we know that permanent correction of the retroversion by operation is indicated. I disagree thoroughly with the advice not to tell the patient of the malposition. I consider it very important to inform her of its existence, but at the same time to impress her with the nonimportance of the anomaly and to encourage her to come back occasionally for reexamination. That will obviate the necessity of operating, as suggested by Dr. Goldspohn, as a preventive measure. An uncomplicated retroversion might thus be left uncorrected, or corrected temporarily with a pessary. At some later day, probably after she has had more children, an operation might be necessary. I do not think that a pessary should or could be slipped in without the knowledge of the patient, particularly since I agree with Dr. Taussig that it must be well fitted or it might cause symptoms in itself. There is a very large group of symptomless movable retroversions that can be and should be left alone at least until some symptoms appear. Very many of these cases will never require operation.

DR. OTTO H. SCHWARTZ, St. Louis: That the symptoms produced by the acquired retroverted uterus have been greatly exaggerated is unquestionably true, but that there are uteri which are retroverted which cause symptoms is equally true. Therefore, in the case of the acquired uterine displacement the most important feature is the prevention of this condition. In the obstetric practice of any man who is definitely a specialist, it is undoubtedly the custom to examine patients at the end of six weeks postpartum, or thereabouts. Such private patients avail themselves of the best care and have the proper nursing, and therefore do not necessarily have to exert themselves in the first few weeks of the puerperium. Retroversion of the uterus under these circumstances is comparatively uncommon. On the other hand, in the clinical patients and the patient who is handled by the midwife and, perhaps, the general practitioner, which includes the great majority of obstetric cases, these patients, owing necessarily to their station in life, have to get about early and do considerable work early in the puerperium. That retroversion in this class of patients is a rather common complication of the puerperium is strikingly brought out by our recent experience in examining patients of this type as a routine about six weeks postpartum. We found that approximately one third of these women at this time present retroversions. If pessary treatment is of any value, it is of chief value at this particular time. This treatment not only corrects the retroversion, which in most instances is a permanent correction, but also definitely prevents chronic subinvolution. In my opinion this is one of the most frequent causes of subinvolution. It is the chronically subinvoluted uterus which causes much trouble near the menopause. The uteri of women near the menopause examined after hysterectomy, with no new growth, showed the picture of chronic subinvolution more than any other lesion.

DR. A. N. CREADICK, New Haven, Conn.: The puerperal uterus should be excluded from the discussion. A large puerperal uterus is particularly susceptible to retroversion, whether from trauma or from faulty posture. Obviously, slight degrees of trauma may overbalance and convert a peurperal uterus which is not yet wholly involuted into a retroverted uterus. The physics of uterine support are not yet settled. I think that there are just as many opinions in regard to the efficiency of the pelvic floor and its various ligaments, together with the hammock support of the base of the broad ligament, and there are just as many opinions as to what supports the uterus, as there are gynecologists investigating the subject. On the other hand, I want to concur with Dr. Findley so far as to say that uncomplicated and non-symptom-bearing retroversion during the child-bearing period should not be subjected to operative treatment. It is my teaching that women who are still in the child-bearing period who have non-symptom-bearing retroversions had best be let alone. As to how far one shall go in talking to the patients or in not referring to the condition one has discovered, I think that the social condition of the patient and one's relation to that patient have to be evaluated in each individual case. It is not safe to neglect to mention to the patient or some of her immediate family the fact that one has discovered a retroversion. On the other hand, in the case of a woman of good social standing, who can afford periods of recuperation, if necessary, and who keeps in touch with her physician, such a patient can safely be treated conservatively, undergoing operation when any symptoms supervene, particularly at the menopause.

DR. HARRY E. MOCK, Chicago: By temporary acute displacements I mean those displacements described by Simms, Haney, Bacon, Plummer and many others, characterized by sudden severe pain in the pelvis, the symptoms different from any ever before experienced, which always require the services of a physician and which are readily corrected, making the disability only temporary. I want to thank Dr. Talbott for bringing out the very important point of being positive in one's statement if one is called as a medicolegal witness. If one believes that trauma caused the displacement, one should say so positively. If one knows that trauma did not cause the displacement, one should just as positively say that it did not.

DR. PALMER FINDLEY, Omaha: It is gratifying to find that the three authors agree on the one important feature of the discussion, that is, the clinical signficance of the uncompli-

cated retroversion. Although some disagree with us in regard to uncomplicated retroversions, really in point of fact I do not think that there is any wide difference. Only 4 per cent. of my cases are classified as uncomplicated. It is possible that as only two of these women were operated on—and I promise never to do it again—possibly some of the eighteen patients had some pathologic condition in the pelvis that I did not recognize. I thought I was reasonably sure that they were uncomplicated; so that it is not a large percentage that we can classify as uncomplicated. If I could bring myself to believe that the turning backward of the long axis of the uterus on an imaginary transverse axis will in some way or other distort the lumen of the veins as they course through the broad ligaments, I would gladly assent to all that Dr. Gellhorn and others have said, because I can understand that a passive congestion of the uterus and its appendages would lead to all manner of disturbances, such as leukorrheal discharges, excessive menstrual flow and dysmenorrhea, and eventually to sterility and backache. It is not convincing to me to demonstrate the emptying of the uterus and ovarian veins as one of the speakers has suggested he has done by placing the patient on the operating table, opening the abdomen and lifting up the uterus. Of course, they will empty themselves. They will do it in the Trendelenburg position whether one replaces the uterus or not. It is difficult, if not impossible, to get at the final causal factors in the development of varicose veins of the pelvis. One has to go a long ways away from the pelvis before one can rule out the remote causes for portal congestion and for circulatory disturbances far and wide in the body. The position which I have taken on the uncomplicated cases is not the position which I held years ago. And I do not know that I have any great responsibility in assuming this position today because I simply let my records speak for themselves.

DR. LEDA J. STACY, Rochester, Minn.: I was glad to have Dr. Findley call attention, more emphatically than I did, to the condition which he aptly terms "pelvis squint." Many girls and young women of this type come to the clinic. They are tall and nonathletic, and they complain of backache, constipation and dysmenorrhea. They have been told of retroversion, and they attribute all their symptoms to this displacement. In the majority of these cases, if one begins a surgical program, the girl is started on her way to a state of chronic pelvic neurosis. One of the men, in discussion, made the statement that the pessary should not be used in a virgin. I am sure that we all agree with him in this. It seems to me that the only indication for the use of a pessary in treating retroversion is as a therapeutic test for a few days before operation. If the patient is relieved while the uterus is held in position by the pessary, then relief can be expected following an operation which permanently corrects the displacement. In most instances of uncomplicated retrodisplacement in young women it seems advisable not to mention the condition to the patient, but to explain the situation to the mother. I agree with Dr. Findley, regarding the significance of varicose veins of the broad ligament. During an abdominal operation the pelvis is usually examined and, while the surgeons at the Mayo Clinic occasionally note a varicosity of these veins, they believe that these varicosities seldom cause clinical symptoms.

Aspergillus Fumigatus.—Occasionally certain species of molds attack the lungs, most frequently that known as *Aspergillus fumigatus*. Usually it is a secondary invader in tuberculous cases, but as Hamman says it may affect the lungs primarily, causing ulcerative and suppurating lesions. *Aspergillus fumigatus* is widely distributed in the outer world and may be found on vegetables, grain bread, and other foodstuffs. It is presumed that infection follows inhalation of the spores. There is nothing characteristic in the clinical picture of aspergillosis, and a diagnosis can be made only by microscopic examination of the sputum. When the infection is primary, the symptoms are those of chronic tuberculosis. A bronchial form which runs the clinical course of a chronic bronchitis has been described.—*J. Lab & Clin Med.*, February, 1922.

PSYCHOSES ASSOCIATED WITH SYDENHAM'S CHOREA*

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The syndrome of chorea is usually classified under four main groups: (1) the infectious group, Sydenham's chorea and chorea gravidarum; (2) the psychogenic and hereditary group, comprising the spasmodic tics and Huntington's chorea; (3) the myokymia disorders, including symptomatic fibrillary twitchings and Friedreich's myoclonus multiplex, and (4) choreiform movements associated with organic conditions, occurring in hemiplegias, in the chronic choreas of childhood and in other structural brain disturbances, such as those associated with epidemic encephalitis. Many interesting clinical pictures have been reported, accompanying the recent epidemic of encephalitis. Bizarre muscular movements of almost every kind have been described.

In a series of 154 cases, I have observed choreiform movements eight times. In one of these, a diagnosis of Sydenham's chorea was made during the first week, after which the patient became lethargic, complained of diplopia and presented the usual picture of epidemic encephalitis. Another patient, during the third week of encephalitis, developed choreiform twitchings which gradually increased in severity until a typical Huntington's chorea was presented, and the patient died within six weeks. Unfortunately, no postmortem was permitted. A third patient developed definite choreic movements in the upper right extremity, secondary to a convulsive seizure, which occurred during the convalescent period of encephalitis. Three of these cases were further complicated by a definite psychosis. However, I have not included them in this paper, but confined myself entirely to Sydenham's chorea associated with mental symptoms.

Marquio [1] discusses the relation between epidemic encephalitis and chorea. He reports four cases, in three of which necropsy revealed a diffuse encephalitis.

In reviewing the literature on the insanities associated with this condition, one is impressed with the frequency of the statement that mental disturbances in some form are an essential manifestation. Bianchi [2] says that the choreic subject is always mentally affected. In the early stage, when the choreic movements are mistaken for childish restlessness, the character is already markedly altered. These youngsters are inattentive, indifferent, less courageous than usual, have great difficulty in committing tasks to memory, and may show direct perversion of family affection. As the disease progresses and the choreiform movements become marked, mental disturbances, not only from the sphere of the sentiments and the will, but also from that of thought, become pronounced. The associated processes are often interrupted. Frequently, distressing hallucinations develop, and the muscular agitation of chorea may be complicated by a true psychomotor agitation of hallucinatory origin. Jordan [3] is in accord with this and states that, in every case of chorea, mental functions are more or less impaired.

*Read before the Section on Nervous and Mental Diseases at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

1. Marquio, L.: Abatt. Arch. espan de ped. **5**:84 (Feb.) 1921.
2. Bianchi: Textbook of Psychiatry, 1907, p. 750.
3. Jordan, W. R.: Midland M. J., February, 1915.

Kraepelin,[4] in his "Lectures on Clinical Psychiatry," describes a psychosis particularly diagnostic of the type of insanity observed in chorea. The outstanding features are senselessness and bewilderment, with choreic movements, occasional hallucinations, a morbidly cheerful mood, and great restlessness with rapid physical sinking. However, in his textbook on psychiatry,[5] he groups this syndrome under the head of delirium due to infections, without any special diagnostic import. Burr,[6] on the other hand, believes that there is no definite type of psychosis associated with chorea and that the same combination of mental symptoms may, and does, occur in and after acute infectious fevers, and sometimes primarily. It simply means the inability of the patient to withstand the additional strain of an infection. He objects to calling chorea insaniens a disease, for, in his opinion, these various psychoses happen to occur in the course of the chorea.

Harding[7] reports six cases which he classifies as chorea insaniens. The important features in this type of Sydenham's chorea are the rather sudden onset and the severe motor disturbances and pronounced mental symptoms, associated with fleeting but distressing delusions and hallucinations, accompanied by maniacal activity, fever, delirium, paralysis and coma.

I have included two cases illustrative of this type: one will be reported in detail as Case 5; the second case was that of a nurse, aged 20, in which there was the usual course of a Sydenham's chorea. During the period of convalescence, a double lobar pneumonia developed, complicated by this acute mental picture. This condition continued for about ten days, after which the patient made an uneventful recovery. Both of these patients, aside from the choreiform movements, presented a psychosis differing in no respect from the ordinary mental disturbance occurring in a severe infection. In the foregoing case, evidence of a definite psychosis did not develop in the course of the chorea, but only after the additional strain from the toxins of the pneumonia occurred.

Portens[8] reports a fatal case of chorea insaniens of eight days' duration, and calls attention to the fact that only seven cases were reported in the *Journal of Mental Science* in twenty-two years, from 1890 to 1912.

Thayer,[9] in a study of 799 cases, reports four fatalities due to chorea insaniens, two with postmortem findings. His article deals mainly with the cardiovascular manifestations, and very little reference is made to the complicating psychosis. Abt and Levinson,[10] in a study of 226 cases, state that some patients manifested difficulty in speech and mental symptoms and that a few patients developed melancholia or mania. In one case the child was very maniacal, even after the abatement of the choreic symptoms, the acute excitement later on changing to a melancholia, which continued for several weeks.

Kleist,[11] in an article on psychic disturbances in chorea minor, bases his observations on 154 cases. In twenty-one cases no mental symptoms were observed; in ninety-two cases a definite, though mild, psychosis was manifested, and in forty-one cases serious mental disturbances were present. In the ninety-two with a mild psychosis, sixty-three patients showed mental symptoms of anxious, frightened and tearful irritability; four patients manifested outbursts of anger; two showed childish sauciness and disobedience, and twenty-three manifested diminished spontaneity. In the forty-one cases of marked psychosis with a mortality rate of 20 per cent., no uniform mental picture predominated.

I have had an opportunity to observe eighty-eight cases of Sydenham's chorea in the private practice of Dr. Riggs, Dr. Hengstler and myself, and in my neurologic service at the City and County Hospital of St. Paul. Eighteen patients, or about 20 per cent., manifested definite symptoms of a psychosis. There was no uniformity in the mental picture except that frequently distressing hallucinatory ideas were present. These cases usually ran a shorter course than the manic-depressive or dementia praecox groups, and the mental improvement, once begun, led to rapid complete recovery. This is very suggestive of a toxic or infectious origin. A large majority of the other patients showed peevishness, irritability, marked selfishness, mild emotional disturbances and some lack of concentration; but during the entire course of the chorea, no mental symptoms of sufficient import manifested themselves to warrant the diagnosis of an insanity.

Case 1 suggests the possibility that a definite psychosis in an unstable individual can be precipitated by an attack of Sydenham's chorea:

CASE 1.—A moral deliquent, aged 9, seen at the City and County Hospital, Feb. 2, 1922, whose family history was negative, had an excellent school record, was studious and obedient, and was in the third grade at the time of admission to the hospital, Dec. 7, 1921. She frequently played truant. Away from school she manifested a vicious disposition, was quarrelsome, would lie, would teach other youngsters to masturbate, and would obtain money under false pretenses. She developed a mild Sydenham's chorea in September, 1921, which had become quite marked by December and from which she recovered in February, 1922. During her stay at the hospital she appeared normal in every way until her father came to take her home. When she saw him she became very excited and terrified, hid under the bed, and refused to go with him. Later in the day she told the nurse that her father had come to murder her, and that he would choke her, and that she saw the hilt of a sword in his pocket. In the course of a week, she expressed other persecutory ideas: that she would have her intestines cut out; that she saw men coming through the window to murder her; that she would be burned to death; that she saw dead people whom God had killed in the yard, and that she heard a patient in the ward say that she had burned her child to death. Aside from these ideas, she was a bright and excellent helper around the ward, assisting the other little bed patients. Her delusional ideas have continued to the present time. She was discharged from the hospital, March 4, 1922, without any mental improvement. Seldom one sees so marked a persecutory picture in so young a child. Undoubtedly, the cerebral irritation, or the toxemia due to the chorea, brought a latent dementia praecox to the surface.

Mental symptoms may occur at any stage in the course of Sydenham's chorea. In patients with marked muscular twitchings, the psychosis often runs a course parallel with the severity of the choreiform movements. Case 2 is illustrative of this:

CASE 2.—A factory girl, aged 18, was admitted to the City and County Hospital, Sept. 22, 1921, with an acute endocarditis. In about three weeks, October 11, she developed a Sydenham's chorea and I saw her at that time. Her choreiform movements were very pronounced for eight weeks, and then gradually subsided. October 14, three days after the

4. Kraepelin, E.: Lectures on Clinical Psychiatry, 1904, p. 135.
5. Kraepelin, E.: Psychiatrie, Ed. 8, **2**: 250.
6. Burr, C. W.: J. Nerv. & Ment. Dis., June, 1908; ibid. **45**: 237 (March) 1917; Pennsylvania M. J. **21**: 163 (Dec.) 1917.
7. Harding, G. T., Jr.: Ohio State M. J. **13**: 320 (May) 1917.
8. Portens, C. A.: Am. J. Insan., 1913-1914, p. 945.
9. Thayer, W. S.: Chorea, with Special Reference to Cardiovascular Manifestations, J. A. M. A. **47**: 1352 (Oct. 27) 1906.
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onset of the chorea, she had periods when she became terrified, was afraid to be alone, especially in the dark, had hallucinations of sight, saw mice and moving objects in her room, saw a man climbing through the window, and she would scream with fear. For ten days she had to be tube-fed because she thought the food was poisoned; she became very resistive and stubborn and refused to talk to any one; she had times when she was unduly emotional and would cry all the afternoon. With the subsidence of the chorea in December, her mental picture improved rapidly and she was able to leave the hospital within four weeks. This patient was markedly substandard. Although 18 years old, she weighed only 84 pounds (38 kg.), was 4 feet, 9 inches (145 cm.) in height, and looked like a child of 12 years, facts suggestive of some endocrine disturbance. Her menstrual functions, however, were regular; blood tests were negative and a roentgen-ray examination of the skull revealed nothing abnormal.

Heredity is usually given a prominent place among the etiologic factors in Sydenham's chorea. Many writers, however, are at variance with this. Burr [6] believes that direct inheritance plays practically no part. Furthermore, the occurrence of chorea is only slightly more frequent in the so-called nervous child than in others. Only a very small percentage of the major hysterias and psychoses in later life give a history of a previous attack of chorea minor. Of the hundreds of patients treated at the Orthopedic Hospital and Infirmary for Nervous Diseases at Philadelphia in thirty years, less than 1 per cent. gave a direct hereditary history in either parent.

Wallenberg found that among 539 cases, 2 per cent. had had chorea in one parent.

In Kleist's series, more than 30 per cent. showed an hereditary taint. Burr reports one family in whom seven cases occurred in three generations. I was unable to find a similar record in the literature. A study of the family histories in many of our cases was so unsatisfactory that no reliable deductions could be made.

Patient 3 presented a very unstable family history. He had had previous attack of chorea, and a very marked psychosis complicated the second attack.

CASE 3.—A girl, aged 17, a high school student, seen June 10, 1921, whose father died at 40 from an acute mental disturbance, and whose mother developed an involutional melancholia during the climacteric, had a maternal aunt who had been suffering from an involutional psychosis associated with persecutory ideas since 1918, and a maternal uncle who had always been queer and seclusive. The personal history was negative except for an attack of acute articular rheumatism at 12, followed by Sydenham's chorea of six weeks' duration without any definite mental symptoms. The present illness began early in March, 1921, with an attack of acute articular rheumatism. The patient recovered within one month and remained well till the latter part of April, when she developed a typical Sydenham's chorea of the hemiplegic type, which continued until the first week in July and then completely subsided. In June, 1921, she became unduly irritable and emotional. About one month later, she became depressed, and had frequent crying spells and periods of acute excitement during which she became very noisy and terrified. She developed persecutory ideas, said that she would be tortured, that the milk was poisoned and that the bedclothes were filthy, and she refused to sleep in them. She developed hallucinations, saw bugs and strange people, and complained of smelling gas in her room. She frequently expressed a desire to die because of the distressing surroundings, but gradually improved during September and within two weeks made a complete recovery.

Patient 4 presented an unusual number of complications, and had a most violent course both physically and mentally, but ultimately made a satisfactory recovery.

CASE 4.—A woman, aged 21, a stenographer, whose family and personal history was negative, began, May 20, 1921, to have periods of depression, crying spells and fear of death. June 1, she developed a Sydenham's chorea which continued for one month. With the onset of the chorea, she became acutely disturbed and excited; she would tear her clothes and threaten suicide. She refused to eat because the food was doped, saying the potatoes were filled with fecal material, and for three weeks she had to be tube-fed. During July she had periods during which she saw snakes and bugs in her bed, which would terrify her. From June 7 to August 15 the temperature varied between 100 and 103.4 F. June 13, she developed an acute endocarditis and, July 16, a phlebitis of the right leg. Soon after she developed ulcerative areas on the buttocks, on the top of the head, on the outer surface of the left leg and on the right ankle. She began to improve about August 20, and during the first week in September her mental picture cleared up. She made an uneventful recovery and was discharged from the hospital, October 14. Aside from a leukocytosis averaging 12,700, the blood picture was normal. The spinal fluid was negative.

Patient 5 presented the usual characteristics of a chorea insaniens.

CASE 5.—A girl, aged 13, a high school student, seen March 13, 1915, began to have chorea, February 12, which was of undue severity for about five weeks. During this time the temperature was about 103 F., and she developed multiple friction sores on her chin, elbows, knuckles, buttocks, knees and ankles. March 4, she became unduly emotional, had terrifying hallucinations of sight and hearing, and March 14, she became semiconscious and delirious for about two weeks, during which time she had to be tube-fed. She gradually improved, made an uneventful, rapid recovery and left the hospital, May 20. During the summer the tonsils were removed. The following spring she had another mild attack of Sydenham's chorea without any definite mental symptoms. She has been well since that time.

Case 6 has been included among the cases of Sydenham's chorea because of the onset early in life. It might be classified with the chronic choreas of childhood but, because of a definite history of Huntington's chorea in three previous generations, it properly belongs in this group.

CASE 6.—A boy, aged 11, was admitted to my neurologic service at the City and County Hospital, July 29, 1915. The father developed Huntington's chorea at 26, and committed suicide at 34 by taking rat poison. A paternal uncle developed a similar condition at 27, and also committed suicide. A paternal grandaunt and a great-grandmother were similarly affected. The mother, one brother and three sisters were living and well. The present illness began at 5 years of age with slight irregular twitchings of the hand muscles, progressively increasing. When 9 years old, the patient was in the third grade, but made no progress during the following two years. He had to discontinue school at 11 because of the chorea and mental impairment. On admission to the hospital he presented the usual picture of chorea. However, his expression was blank, his speech hesitant, he had some memory impairment, and he was unable to perform simple mathematical tests. The neurologic examination was negative. The blood and spinal fluid were normal. The choreiform movements gradually increased, and the mental deterioration became more pronounced. The patient died from a carbuncle in December, 1918, at the Faribault Institute for Mental Defectives.

CONCLUSIONS

In this series of eighty-eight cases of Sydenham's chorea, psychoses have not occurred so frequently as is commonly reported. A large percentage during their entire illness presented no definite evidence of a psychosis.

Mental symptoms observed during the course of this disease have not been sufficiently characteristic to enable

one to make a diagnosis of chorea from the psychosis alone. Hallucinations of a distressing character have been a frequent manifestation. The mental picture conforms to that observed in toxic psychosis.

435 Hamm Building.

ABSTRACT OF DISCUSSION

DR. FRANK R. FRY, St. Louis: Neurologists should begin disseminating their modern interpretation of chorea. We can now reduce our conception of chorea to the equation of an encephalitis, or to encephalitic reactions. All cases that present a fairly good picture of so-called Sydenham's chorea are not necessarily due to the same infectious process, but are due to an exudative reaction, an encephalitis that is substantially the same clinically in many cases. From this standpoint, the choreic psychoses, being a part of such reaction, may vary. Their percentage in a list or group of cases of chorea does not help us in defining the entity of the syndrome. They vary with the character and distribution of the exudative reaction. Familial chorea, so-called Huntington's chorea, has no important relation to juvenile or ordinary chorea. In these hereditary cases, there is simply some general cerebral degenerative process in the course of which the choreic movements are an incident.

DR. TOM A. WILLIAMS, Washington, D. C.: This paper has drawn attention to a formulation which I think is impressed on neurologists at least, implicitly, but which is sadly forgotten by the rest of the profession; that is, that we should not diagnose the psychoneuroses by the process of exclusion. An eminent physician said that the psychoneuroses must be diagnosed only when one can exclude diffuse inflammatory reactions of mild nature. An eminent neurologist denied the possibility of the occurrence of a psychogenic disorder. We all do diagnose the psychoneuroses, not by exclusion, but by the discovery of methods of induction, and of their removal by a formula very similar to that of Babinski: that, if it can be induced or removed by suggestion, it is not an organic disease. The other day, Dr. Patrick spoke of a case of alleged epilepsy in which those methods were indicated and which the revelation of the psychogen demonstrated hysteria and disproved epilepsy. A few moments ago Dr. Timme cited a similar case. But I think that neurologists should keep on formulating the fact that it is not by exclusion that psychoneuroses are diagnosed. In fact, if we fail to find situational, inducive factors in a condition which seems like a psychoneurosis, and if we fail to modify the patient's attitude by psychotherapy, we must then infer that we are dealing with some kind of physical disorder, a lesional condition of the brain such as encephalitis or chorea, or a chemical disturbance of the organism, as in endocrine disorders and infections. I recall an instance of apparently psychic disturbance consisting merely of lacrimosity, without the feeling of sadness, in which, not believing in unconscious mechanisms, I did not subject the patient to a prolonged so-called psychanalysis, but in which, by exclusion, not discovering any psychogenic factor and not modifying the reaction by psychotherapeutic methods, I concluded that there existed a lesion of the brain of post-encephalitic character. Its effects cleared up spontaneously. Cannot we say to other physicians that we demand that a diagnosis of psychoneurosis be not loosely made by exclusion, but that it be made only by psychiatrists and neurologists, and only by them when they are able to determine the factor which has induced the maladjustment?

DR. L. G. LOWREY, Iowa City: At the Boston Psychopathic Hospital, during a period of three and one-half years, we had only about six cases of psychosis associated with Sydenham's chorea or due to it. These were, in general, the ordinary types of delirium. They were not subjected to any special study because, it seemed to us, they did not show any special points that demanded it. They were liable to be the type manifesting very violent choreic movements, possibly the type formerly referred to as chorea insaniens; but as I never saw a case in which the differentiation of chorea insaniens was clearly made, I do not know exactly what is meant by that term. Then, early in 1919, some months after the crest of the wave of admissions of cases of psychoses associated with influenza had been passed, we began to receive a series of cases of what we, at that time, termed violent chorea in adults. In virtually all cases, the clinical picture was very much the same as that of the violent choreas we had in the younger children. It was not until a French report came out recording the occurrence of a choreiform type of epidemic encephalitis that we recognized the condition with which we were dealing. We thought it was an obscure sort of influenzal brain disorder. We had about twelve of these cases, all told. There is another group, perhaps of greater importance, in which a persisting conduct disorder seems to begin with the onset of an acute chorea at or about puberty. We deal with the same general types of conduct disorder that are common in the psychopathic personalities, but I doubt very much whether that is a proper designation for the group. Then, of course, there are some cases in which one might vaguely suspect that an antecedent chorea had something to do with the psychosis developing much later. But, in general, I am glad to hear Dr. Hammes say that very few chorea cases are directly associated with the psychoses.

DR. GROVES B. SMITH, St. Louis: During the last two years, a study of a series of about seventy-five cases of chorea was made, with a view to determining just what influence chorea had in the development of a psychosis. Of this series, there were only two patients who had a definite psychosis. However, each of the patients studied had an abnormal mental state, sometimes obscure, which varied according to the amount of treatment, the temperature, and the degree of choreic manifestations noted. Many of the patients seen in the stage were reexamined later at the neurologic clinic. It was found that, primarily, the condition in this group was the same as that ordinarily found among nervous children, many with abnormal conduct disorders; that is, essentially, an unstable nervous system. About 75 per cent. of the patients were of superior intelligence when tested after the acute stage, while during the acute stage they were often inferior. One girl, when examined in the ward, gave evidence of psychosis, although perfectly oriented as to time and place. She said that her mother had died and that her father had been killed in France. In reality, her parents had visited her the day before, and were living and well. When the patient was seen four months later, this mental state had cleared and she was a bright child with superior intelligence. Nervous children often have a vivid imagination, and in chorea, with possibly a toxic delirium, these symptoms are merely added to the clinical picture. With the frequent hospitalization, the nervous child picks up a variety of hospital complaints, which are also added to the clinical picture. These patients have abnormal behavior reactions, not the result of the chorea but the underlying personality defects; but the chorea gets the blame and too often this is called a psychosis, when in reality it is a toxic delirium. In studying these patients, if one observes the underlying personality in acute attacks, and, again, in the free interval, each one presents the picture of a nervous child; but a psychotic state, if the acute toxic delirium seen also in the other acute exanthemas is not so classified, is exceedingly rare.

Tuberculosis in Scandinavia.—At the recent international antituberculosis conference, it was reported that the mortality from this disease had decreased to a great extent in Norway in the last seventeen years. The decrease is confined almost entirely to the first five years of life. The same thing has been observed in Sweden and Denmark. Pirquet tests have demonstrated that the denser the population the greater the percentage of positive reactions. In the free schools of Christiania, 80 per cent. of the children, 7 and 8 years of age, gave positive reactions; and in the country the percentage was from 30 to 40 per cent. In the most remote districts, not a single child under 15 reacted positively.

THE RESULTS IN FOOD ANAPHYLAXIS OBTAINED BY CUTANEOUS AND INTRACUTANEOUS METHODS

THE INFLUENCE OF ARSENICAL PREPARATIONS ON THE ANAPHYLACTIC FOOD REACTIONS

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Although hypersensibility to foods and its resultant pathologic states has been conjectured for many years, the diagnosis of this idiosyncrasy has not rested on scientific grounds until very recently. In the past, the inference that this or that food substance may in whole or in part be responsible for a diseased state rested on the observation of the patient or the physician or on both, or was made by a process of exclusion. Of recent years, more scientific and accurate methods of diagnosing food hypersensibility have been introduced.

The cutaneous method consists in abrading a very small area of the skin with either a needle or a Pirquet borer. Then a small amount of the food protein is rubbed into the abraded surface. A positive reaction is indicated by the development of a well defined urticarial wheal, surrounded by a zone of erythema. This reaction usually appears within from five to ten minutes, and lasts from twenty to forty minutes. In every instance in this work a control test was made, tenth-normal sodium hydroxid being used, for this chemical substance was utilized in the performance of this type of test.

The other method of performing the anaphylactic food tests is the intracutaneous or endermic method. This consists in injecting endermically a sterile standardized solution of various food proteins. In our work the amount injected was 0.1 c.c. In every instance the control solution was also injected. The result of the test was read forty-eight hours after its performance. This was done so as to obviate the danger of reading false or traumatic positive results. A positive result is indicated by the development of a papule and a surrounding erythema, the degree of the result being indicated by the intensity of the reaction. It is admitted that the endermic method is the more reliable method and the more delicate; it is also the more difficult method to do and is almost impossible to accomplish in the case of small children. In adults, however, it is our belief that it is the method of choice.

In a contribution relative to the histologic picture of positive endermic food tests, I[1] have shown that it appears highly probable that protein materials call forth a mononuclear cell reaction on the part of the tissues. If this fact is proved, it goes a long way to establish the specificity of the positive endermic food reactions.

This study had for its purpose a comparison of results obtained by the cutaneous and intracutaneous methods. With this object in view, the patients were selected at random with no idea as to whether or not foods may or may not be an etiologic factor. The tests were made on fifty-eight patients. In thirty-six instances wheat, egg white, cow casein, beef, pork and lamb were used both by the cutaneous and intracutaneous method; in twelve instances, only oysters, wheat and egg white were employed. In a few instances herring and potato proteins were also utilized. In every instance of this comparative study, the same food products were utilized in the cutaneous and the intracutaneous method.

A study of our records discloses that out of this series of fifty-eight tests there were only ten instances, or 17 per cent., in which there were discrepancies between the cutaneous and the intracutaneous method of performing food anaphylaxis. Out of these ten, there were nine instances in which the intracutaneous method was positive and the cutaneous negative, and one instance in which the reverse was true. A further study of our records shows that in nine out of these ten instances, there was a discrepancy in only one food protein; and out of these ten instances, four were only suggestive or very weak positive results, and in five instances the varying food protein was cow casein. In another contribution I emphasized the fact that, while weak or suggestive reactions obtained with food proteins should be taken into account, too much emphasis should not be placed on them.

In my own work, while I correct the diet, utilizing also the weak reactions, I lay no emphasis from the point of view of prognosis on results obtained by making the food tests, unless the reactions are markedly positive. Studying the results, therefore, from the standpoint of eliminating the suggestive positive results, only six varying results, or 10 per cent., were noted. In only one instance was a difference noted in more than one food protein, and in that particular instance there was a discrepancy in three food proteins. In twelve instances the food anaphylactic tests were repeated two or three times so as to determine whether any difference in results could be noted. While this series is rather small to yield any dogmatic results, the impressions are that the repetition of these tests, whether by the cutaneous or the intracutaneus method, does not materially influence the findings, and the results are almost constant.

The effects of the arsenical preparations on the anaphylactic food reactions were also studied. In one group of nine patients, all of whom were bedfast, the endermic food tests were performed, cow casein, egg yellow and rice being used. After the results had been noted these patients were placed on liquor potasii arsenitis (Fowler's solution), 10 drops (0.5 c.c.) three times a day for a period of ten days. These endermic food tests, utilizing the same food proteins, were again performed.

Our study shows that, taking the results as a whole, we may state that arsenic by mouth does not materially influence the endermic food reactions. In six instances, the results were identical. While a difference was noted in two instances, it was rather one of degree. In the case of one patient there were weak reactions to cow casein and egg before the administration of the arsenicals, and negative response to these foods after the administration of the same remedy.

The intravenous injection of arsphenamin does not materially influence the endermic food tests. In a series of twelve patients to whom from three to seven injections of arsphenamin were administered and on whom endermic food tests were performed both before and after this treatment, no appreciable differences in the endermic food reactions could be noted. It would appear from this study that the arsenicals, whether given orally or intravenously, do not materially influence the endermic food reactions.

1. Strickler, Albert: A Histopathologic Study of Positive Cutaneous Tests, J. A. M. A. 78:1287 (April 29) 1922.

CONCLUSIONS

1. It would appear from this study that there is little difference between the results obtained in food anaphylaxis whether the cutaneous or intracutaneous methods are employed.

2. Considering that we utilized fifty-eight subjects, on each of whom approximately six different proteins were utilized, the differences noted were very slight.

3. Stress must be placed on the fact that practically in no instance were the differences noted of a high degree of positiveness.

4. As shown in a previous communication, great stress cannot be laid upon weak or suggestive food reactions, whether obtained by the cutaneous or the intracutaneous method.

5. The repetition of the food tests by either method does not materially influence the results of food anaphylaxis.

6. It seems suggestive that the arsenical preparations, whether administered by mouth or intravenously, do not materially influence the endermic food tests.

327 South Sixteenth Street.

HODGKIN'S DISEASE FOLLOWING DYSENTERY

RECOVERY OF PARASITES FROM STOOL AND IMPROVEMENT WITH ANTIPARASITIC TREATMENT

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Little help of a very definite nature as to the cause of Hodgkin's disease has been at hand other than its suspected infectious origin. With opinions as to cause varying between tuberculosis, malignancy and the more common bacterial infections, one wonders why there has not been more expression in favor of parasitic origin. Recently Kofoid [1] has called attention to the frequency of intestinal parasites in patients with Hodgkin's disease, and asserts that he has observed cell bodies which resemble amebas in the glands. This may be an important source of investigation, and might be the means of eliminating one more type of glandular enlargement from the group of Sternberg's disease, lymphosarcoma and malignant lymphogranuloma, of which too little of the etiology is known. It is quite possible, as Coplin [2] has recently stated, that any irritative effect on glands might produce, according to stage, an inflammatory or malignant picture.

A case is reported in hope that it will encourage more consideration of the parasitic origin of Hodgkin's disease. It is also hoped that intestinal symptoms will be given more attention, and stools examined, for I feel that there is a dysenterical prelude in a large number of cases of Hodgkin's disease. This opinion is shared by others.

REPORT OF CASE

Mr. C., aged 30, complained of throbbing in the epigastric region after meals and shortly after retiring. This had been noticed for about a week. For the same length of time some soreness and stiffness was present in the right lumbar region. His past history is of interest and indicates sources of investigation as an explanation of his complaints. Previous to 1920 he had always been well, and resided in the southern part of Ohio. During the summer of 1919 he left this part of the country and went to Isle of Pines. About six months after taking up his residence there he was taken sick with dengue fever, and was in bed for three days. He never recovered completely, and in the course of the next two months contracted dysentery. After the acute symptoms subsided he was in a run-down condition, with bowels either loose or constipated, with flatus. With the next four months his condition grew worse, and small, glandular enlargements were noted in the right side of the neck. Some fever was present, and a tuberculous infection of the glands was suspected. From this time until Jan. 3, 1921, a tuberculous regimen was carried out. On this date a surgeon removed a section from a brawny swelling involving the right side of the neck above the clavicle. This section had all the appearance to justify the diagnosis of Hodgkin's disease. After this the mass was treated with roentgen ray and gradually disappeared, the fever left, and strength returned. He finally came to Cleveland the latter part of the year, and came under my observation, Jan. 4, 1922.

The patient was intelligent, fairly well nourished, pale, of dark complexion, of moderate height, and of good development. There was no tuberculous history in the family, and he denied venereal infection, and repeated Wassermann tests had been made with negative results. His skin was tanned over the neck and chest from roentgen-ray treatments. The sclera of the eyes was muddy in appearance. The throat walls were catarrhal. The tonsils were removed. The neck glands were not palpable. There was a scar of operation on the right side of the neck. Some of the axillary glands on the right side were enlarged to the size of an almond, and tender. There was one dead bicuspid, and one suspicious molar, with no areas of infection. There was impaired resonance, and there were high pitched breath sounds in the right upper lobe. Roentgen-ray examination of the chest revealed two rather large glands at the root of the right lung, and one smaller gland close to the trachea in the mediastinum. Some resistance to palpation was noted in the right hypochrondium, and a probable mass was palpable in the region of the lesser peritoneal glands. Epigastric pulsation was present, but no thrill. The blood pressure was 110 systolic and 70 diastolic. The urine showed a slight reaction to a test for bile. Blood examination revealed: red blood cells, 4,960,000 per cubic millimeter; white blood cells, 5,000; hemoglobin, 90 per cent.; differential cell count: polymorphonuclears, 86 per cent.; small mononuclears, 8 per cent.; large mononucuelars, 6 per cent. There was nothing abnormal in the appearance of the cells. The temperature was 99.5. Only positive physical and important laboratory findings are noted.

Roentgen-ray treatments at regular intervals over a period of four months were only partially successful, judged by failure in improvement in general health, return of glandular enlargement again on the right side of the neck, and the disappearance of only the smaller gland in the chest. The glands on the right side of the neck, however, disappeared by more vigorous roentgen-ray treatments.

Sometime in February a series of stools was sent to C. A. Kofoid and his associates at the University of California, who found *Endameba dysenteriae* and two flagellates, *Chilomastix* and *Trichomonas*. Neo-arsphenamin in 0.9 gm. doses was given intravenously, emetin hydrochlorid, ½ grain (0.03 gm.) hypodermically twice daily, daily cleansing enemas for bowels, and ipecac by mouth in properly covered pills. After one week of such treatment the temperature never rose above normal, and a gain in 4 pounds (1.8 kg.) in weight resulted, with return of strength. In the second week a similar gain in weight was made, with gain in strength, and disappearance of pain in the back. The glands in the right side of the neck diminished further, but it is not fair to judge glandular appearance, as roentgen-ray treatments may have a delayed effect. The patient continues to gain

1. Kofoid, C. A.; Swezy, Olive, and Boyers, L. M.: The Coexistence of Hodgkin's Disease and Amebiasis, J. A. M. A. **78**: 532 (Feb. 18) 1922. Kofoid, C. A., and Swezy, Olive: Amebiasis of the Bones, ibid. **78**: 1602 (May 27) 1922. Kofoid, C. A.; Boyers, L. M., and Swezy, Olive: Occurrence of Endameba Dysenteriae in the Lesions of Hodgkin's Disease, ibid. **78**: 1604 (May 27) 1922.

2. Coplin, W. M. L.: A Basis for the Prevention of Cancer, J. A. M. A. **78**: 1527 (May 20) 1922.

and is about to leave my care to go to South America, and it will be interesting to hear of the subsequent course, and the results of a stool examination.

SUMMARY

In this case, Hodgkin's disease followed dysentery. The onset of malignant lymphogranuloma was four months after the intestinal infection, with involvement of the glands of the right side of the neck. The clinical course of the disease was of the nature of other similar cases, with progressive enlargement of the glands in the neck, mediastinum and axilla, fever, anemia and weakness. A section of gland had the appearance of Hodgkin's disease. Six years after infection amebas and two flagellates were recovered. Significant prompt improvement followed remedies directed toward amebiasis.

628 Union Building.

THE RAT AS A DISSEMINATOR OF THE RELAPSING FEVER OF PANAMA

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Attention should be directed to the probable rôle of the rat as a disseminating agent of the relapsing fever of Panama and presumably of Central America, Mexico, Colombia and Venezuela.

In a set of very convincing experiments, Bates, Dunn and St. John [1] have recently demonstrated by human experimentation that the tick *Ornithodorus talaje* Guérin, 1849 is the natural transmitting agent of the relapsing fever of Panama.

Epidemiologic testimony and the argument from analogy with *O. moubata* and *Spirochaeta duttoni* had been presented [2] some time before the actual demonstration of the tick *O. talaje* as the definitive host and carrier of the spirochete had been made.

My own observations on *O. talaje* date back to 1905, when nymphs of this species were first taken from rats (*Mus rattus*) caught in buildings on Ancon Hospital grounds. Adults of the species were collected in August, 1910, in the Panaman village of La Chorerra, and at the village of Arraijan in 1912 and 1913.

Attempts to incriminate the species as the transmitting agent of relapsing fever were made in 1913, but were unsuccessful; the circumstantial evidence was so strong, however, against this tick that in 1917 I [2] published an illustration of *O. talaje* as the probable carrier of the disease. The importance of the earlier observations on the relation of the rat to the tick, however, is now manifest; for the tick has been positively incriminated.

Pino-Pou [2] and Iturbe record the demonstration of *Ornithodorus* as the transmitting agent of infection to animals in Venezuela by Tejera and Pino-Pou.

It is quite clear that the house rat *Mus rattus*, and very likely the field rats, as well as the sewer rat *Mus norvegicus*, are capable of disseminating infection because of their relation to the tick and to the spirochete (*Spirochaeta novyi*).

The evidence for this is based on: (1) the infectiousness of the spirochete for wild rats; (2) the host relationships between man, the tick *O. talaje* and the rat; (3) the habits of house rats and of field rats in visiting habitations, and (4) the probable infectiveness at all stages of the tick, as in *O. moubata*.

With regard to the first, it was demonstrated [3] in 1908 that the house rat *Mus rattus*, as well as the albino variety of *Mus norvegicus*, was susceptible to infection by *Spirochaeta novyi*, the spirochete of the relapsing fever of Panama. Animals inoculated disclosed a single paroxysm, as had been observed by Novy, Carlisle and their colleagues. The type of infection in rats and other animals served to differentiate the spirochete from *Spirochaeta duttoni, S. recurrentis* and *S. carteri*.

EVIDENCE OF HOST RELATIONSHIP BETWEEN ORNITHODORUS TALAJE, MAN AND RAT

The evidence on the host relationship between the tick *O. talaje*, man and the rat is based on the occurrence of this tick in human habitations in native villages, and on its habits and its occurrence on the rat.

Relationship with Man.—My attention was first called to this, Aug. 23, 1910, during a sanitary survey of the Panaman village of La Chorerra in company with the late General Gorgas. The villagers complained of the bite of a tick, which attacked the children at night and caused severe pain as well as inflammation and ulceration.

The tick was described as having habits like the bedbug, living in beds and walls and coming out after dark to feed. A child suffering from tick bites on the neck and shoulders was brought to our party for examination. Ticks were caught in the house where the child lived. They were called by the native Panamans "cinche mamone" and are known in Colombia under the name of "cherivico," "berrinche" and "Cuesca." They had the characters of *Ornithodorus* and were identified by Professor Nuttall as *O. tajale*, and he later [2] expressed the opinion that they might play a part in connection with relapsing fever of Central America and Mexico.

Observations on the tick were carried out later in 1912 and in 1913 when I visited the village of Arraijan. A supply was obtained from beds constructed of bamboo. The villagers knew from the description just what was wanted, and they quickly obtained a number by removing the bamboo slats of their beds, knocking them on the ground, and thus dislodging the ticks, which were easily captured. This seemed to be the native method of deticking their beds.

It is worth noting here that bamboo, which lends itself so readily in many ways to domestic architecture in the construction of houses and furniture in tropical countries, is the bugbear of the sanitary officer because of the facility with which vermin of several kinds find security within its joints.

This lot of ticks was carried to the laboratory at Ancon and was used in a number of experiments. Adult females oviposited after several days, and the minute seed ticks were permitted to feed several times on my forearm. They fed eagerly and increased several times in size, becoming red, leaving a tiny petechial hemorrhagic spot on the skin of the forearm, and causing an intolerable itching sensation.

1. Bates, Dunn and St. John: The Relapsing Fever in Panama, Am. J. Trop. Med. **1**, No. 4, 1921.
2. Nuttall: Spirochetoses, Bull. Johns Hopkins Hosp., February, 1913. Darling, S. T.: Relapsing Fever, in A Reference Handbook of the Medical Sciences, New York, William Wood & Co. **7**: 508, 1912. Pino-Pou, La Fiebre Recurrente en General y Particularmente en Venezuela, Caracas, 1921. Franco, Toro and Martinez: Fiebre Amarilla y Fiebre Espiroquital, Tr. Acad. Nat. de Med. **1**: 169, 1911.
3. Darling, S. T.: Proc. Canal Zone M. A., 1908.

Further observations and experiments were carried out on these ticks, from which it was apparent that larvae would feed readily on human blood. Adults, of course, had been incriminated by the natives, and we had ample evidence of this.

It might appear that we possessed evidence sufficient to incriminate the tick as an obligate parasite of man, and for believing that whatever infection might be derived from man would be passed back to him alone either by adults or by larvae. But we know that certain ticks possess peculiar host relationships, passing part of their time on one host and part on an alternate host. This seems to be particularly true of the nymphal stage, and, of course, not only serves to transmit a disease to another host, but the dispersal of the tick itself in the nymphal stage is furthered by this passive transfer from one place to another.

Relationship with the Rat.—Nymphs of *O. talaje* were frequently taken by me during the examinations of rats for plague and *Trypanosoma lewisi* made in 1905, and subsequently. Nymphs on rats taken in the hospital grounds were found to contain living trypanosomes. Many of the rats doubtless had migrated from the adjoining ward of the city of Panama. Later in 1911 and 1912, during an investigation of the rat fleas of the Canal Zone and the cities of Colon and Panama with the late A. L. Jennings, we frequently encountered nymphs of *O. talaje* in the rats caught daily in the city of Panama. These nymphs were identified by Banks, who stated that larvae and nymphs spend a portion of their life on the house rat.

It is evident from these findings that the nymphal stage of *O. talaje* is spent on the house rat, and that the rat serves as a means of carriage or transfer of the tick from place to place.

Dispersal of Tick by Rats.—From the habits of different species of rats it must be concluded that several species of rats may be concerned in this dispersal of the tick and the spread of the disease.

Not only are the habits of the rats of interest from a zoological and economic point of view, but a wider and more minute knowledge of their habits and movements is essential to the control of the diseases spread by them.

The Indian Plague Commission has shown how plague is passed on from *Mus norvegicus* to *Mus rattus*, and from this species to man, through the agency of the flea. In Panama, I observed that when gray and black rats were confined together the black rats gradually disappeared, having been killed and eaten by the larger and fiercer fighter, *Mus norvegicus*. In the interior villages of Panama and on the outskirts of the city of Panama, *Mus rattus* predominated; while in the city, particularly near the water front, we found that *Mus norvegicus* had ousted the gentler, more definitely house-frequenting and house-living black species. This struggle for survival constantly going on between *Mus norvegicus*, on the one hand, and the weaker species, such as *Mus rattus*, *Mus alexandrinus* and field species, on the other, tends to increase or widen the dispersal of the latter and leads to the distribution of the tick *O. talaje* and the spirochete (*S. novyi*) in places where they formerly did not exist. Changes in the original distribution of *Mus rattus* were quite apparent in Panama in 1905.

In the villages and on the outskirts of the city, particularly near the sabanas and where the bush adjoins the houses, where *Mus norvegicus* is usually absent, and where I found *Mus rattus* infested with *O. talaje*, it is possible occasionally to trap in houses specimens of field species of rats, such as *Diplomys darlingi* and *Sigmodon hispidus* and probably other species, showing that they do enter habitations, possibly when in the dry season their customary food is scarce.

The possibility of species other than *Mus rattus* acting as vectors and disseminators of the tick must not be overlooked.

Transmission to Man.—While we possess no positive evidence as yet that the spirochete can be transmitted by *O. talaje* to man in all stages—larva, nymph and adult—it is quite likely that it can be transmitted; for this is the case with *Spirochaeta duttoni* and *Ornithodorus moubata*, even to the third generation.

Mollers, in 1907, found that *Spirochaeta duttoni* retained evidences of infectability in the third generation, although the parents had not been permitted to feed on infected animals.

We may assume from these observations and from the experiment of Bates, Dunn and St. John, in which they infected a monkey with first stage nymphs which had been fed as larvae on an infected rat, that nymphs are infective for rats, and the infection may be disseminated by means of rats in this way; that is, by rats infecting other nymphs, and these in turn infecting man.

We must assume that all rats that visit habitations in an endemic region may acquire an infestation with nymphs infected with *Spirochaeta novyi*, and that they may act as disseminators of the disease, not only from house to house, but also from village to village. From an epidemiologic study of thirty-nine cases of the disease in Panama in 1907, I concluded that there were grounds for believing that the infected men acquired their infection by visiting native villages where the disease might be endemic. The predominance of the disease in Colon and Gatun and the smaller number of these cases occurring near the Pacific in 1906-1907 indicated also that the disease might have been introduced possibly from Colombia, where it was known to exist in endemic form.

We have reason to believe, then, that the disease can be introduced into a community by means of rats infested with infected nymphs of *O. talaje* as well as by infected persons.

SUMMARY

While the tick *Ornithodorus talaje*, the transmitting agent of the relapsing fever of Panama, may feed on man in all three stages of its development as larva, nymph and adult, it spends naturally a portion of its life on the house rat and probably on other rats which visit habitations.

The rat is susceptible to infection from the cause of the relapsing fever of Panama (*Spirochaeta novyi*). Nymphs are capable of transmitting infection from animal to animal. Rats, therefore, may and do play a part in the dispersal of the ticks and presumably of the infective agent (*Spirochaeta novyi*) of the relapsing fever of Panama. The dispersal of *Mus rattus* into suburban and rural and interior districts as a result of the struggle for survival now going on between *Mus rattus* and *Mus norvegicus*, a struggle which has been in progress and plainly apparent in Panama in recent years, will lead inevitably to the dissemination of the transmitting agent (*Ornithodorus talaje*) of the cause of relapsing fever into places where it does not now exist.

In instituting control measures against the relapsing fever of Panama and Tropical America, cognizance must be taken of these facts, and efforts must be made toward the elimination of the tick not only in habitations, but also on the rat, and elimination of the rat as well. For it will be impossible to control an outbreak of the disease if one of the important agencies in its dissemination is disregarded through failure to attack the tick in the nymphal stage on the rat.

International Health Board.

SPOROTRICHOSIS *

FRANK W. CREGOR, M.D.
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Sporotrichosis is more frequently encountered than any of the other dermatomycoses. The disease is so constantly confined to the cutaneous and subcutaneous tissues that we seem not to have sufficiently acquainted ourselves with its protean character. It may attack many other tissues of the body, and manifest itself in a manner so far removed from the usual clinical picture that it is only by the most careful observation, with the aid of thorough laboratory investigation, that we are able to cope with it.

It is because of encountering a case, which clinically was simple enough, yet which presented some of these important though rare involvements, that I make this report. At the same time, I would like to call attention to the variable manifestations that may appear, with the hope of stimulating the profession to a more thorough investigation of some of these infections, which do not seem to fit any particular entity, yet may have *Sporotrichum schencki* for an etiologic factor.

Sporotrichosis has been recognized as an entity for the last twenty-four years, or since Schenck first described the malady, and discovered and, with the aid of Erwin F. Smith, classified the causative organism. Dr. A. W. Brayton of Indianapolis reported the second case. Following closely came the work of Hektoen and Perkins, Hyde and Davis in America, de Beurmann and his associates in France, Arndt in Germany, Kren and Schramick in Austria, and Adamson and Walker in England. These reports, which were published during a period of about ten years following Schenck's contribution, served to establish sporotrichosis in the medical literature. Since that time, or during the second decade in the life of the disease as a recognized entity, many interesting contributions have been made, especially to the American literature, by Mewborn, Sutton, Meyer, Blaisdell, Shelmire, Trimble and Shaw, Hamburger, Raney and Carey, Stelwagon, Newman, Ravogli, Soloman, Ormsby and Lane. In addition, reports that have found their way into the literature indicate that the disease is encountered all over the world.

The clinical picture of sporotrichosis is very constant —so constant that it has had for its effect the dimming of our vision as to its protean nature. The textbooks make only a mild mention of it, and those making contributions to the American literature do not seem to have encountered it except in very few instances. It would seem that what we know of its variable manifestations we owe, in the main at least, to the French. It is because the American literature contains little or nothing concerning the involvement of tendon sheaths, periosteum and bone that I am desirous of bringing this case to attention.

Usually, there is a trivial trauma. After a time, it is discovered, the injured part has not responded normally, but becomes swollen, livid or bluish in appearance, takes on a shape in keeping with the nature of the injury, and is found discharging a syrup-like secretion, which may be tinged with pus and blood. The appearance of this initial lesion, or chancre as it is termed by some, may be expected to have been influenced by the application of various domestic remedies, consisting of everything from poultices to caustics. It may be encountered anywhere on the body, but most frequently on the hands, for the reason that the hands are most exposed to injury. By the time the stubborn nature of the sore has caused alarm to the host, the secondary lesions will have begun to appear. A nodule, usually in a direction toward the trunk, is observed, located deep in the subcutaneous tissues; it imparts a firm feeling to the touch, and may be expected to be moderately tender. If a still greater time has elapsed, other lesions may have developed, the newer ones following in a direction toward the trunk, until there may be observed many nodular swellings, extending up the arm in chainlike formation, and presenting different stages of progression or regression. There may be observed firm hard nodules covered by a pinkish skin, others which have softened, and others which are discharging their contents, consisting of a syrupy fluid, as before mentioned. My observations have been that there are usually from four to six such lesions, extending from the injury on the hand to the elbow. The patients experience a feeling of well being, remain ambulatory, have little or no elevation of temperature, and, aside from the inconvenience and apprehension, appear quite well. Such may be said to be a fair description of a typical case of sporotrichosis, reports of which, as has been mentioned, have been voluminous.

The disease may affect parent and child, one such case coming under my own observation; it has been reported to have affected as many as three children in one family.

It may suggest a latent syphilis, as it almost always does, to those who are not especially familiar with skin lesions; or, at the site of the initial lesion, or chancre, it may present the clinical appearance of a tuberculosis verrucosa cutis or of a blastomycosis or of both, as it did in my case.

The disease may attack the tendon sheaths, periosteum and bone. In my case, there is a history of a fracture involving these structures, occurring about fourteen years previous to this infection. I have the feeling that changes in the course of the lymph stream, incidental to the fracture and repair, may have directed the infection into the deeper structures, and thereby caused the involvement of tendon sheaths, periosteum and bone, which otherwise might not have occurred.

Sporotrichosis may also infect the blood stream and produce a septicemia and a generalized gummatous process of the skin, together with gummatous lesions of the liver and other viscera, and *Sporotrichum* may be recovered from the blood stream.

It may be associated with tuberculosis, and may attack structures such as the pharynx, larynx, trachea and mucous membrane of the mouth, along with tuberculosis.

* Read before the Section on Dermatology and Syphilology at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

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It would seem, experimentally at least, that when infection has found its way directly into the blood stream, dissemination may be so rapid that the host is overcome before Nature has had time to organize a defense. Too, it is probable that when the sporothrix has found lodgment in a person suffering from tuberculosis of much moment, the body defense has been so exhausted by the tuberculous infection that it is unable to put up a strong fight against *Sporotrichum*.

In the type of infection usually encountered, namely, the subcutaneous lymph space variety, the infection has slow progress, which gives the normal body defense an opportunity to organize for resistance. This would

Fig. 1.—Appearance of arm in case reported, in which tendon sheaths, periosteum and bone were involved, with thickening of tissues about the hand and wrist.

seem to suggest itself as a result of the power of the patient's blood to agglutinate the spores of *Sporotrichum*.

Experimentally, sporotrichosis has been produced by feeding animals on infected foods, and has been produced in the offspring by infecting mothers in the pregnant state. By blood stream inoculations, it has produced a rapid dissemination, metastasis and death. At postmortem examination, the thoracic and abdominal viscera have been found involved in a tuberculoid and syphiloid granulomatous inflammatory process. It may interfere with development, by producing dystrophies and arthropathies; nevertheless, the animals have remained mentally normal.

The difference in *Sporotrichum* as discovered by Schenck in 1898, and as later described by de Beurmann and his associates, would seem not greater than that of any vegetation growing in changed climatic environment, and, in my judgment, should not concern us.

The organism grows readily on the simpler mediums; for the most part, however, in the presence of secondary infection it may not, as it did not in my case and in another case of a similar character. It may be found microscopically in the pus, as it was in my case. But it would seem, from the experience of others, that this is rarely true. In the other case mentioned, which was of a similar character, the culture growth failed, and the diagnosis was made by the agglutination test. The diagnosis later was further confirmed by successfully cultivating *Sporotrichum* from the secretions, after sufficient time had elapsed to clear out the secondary infection.

We did not have growing, at this time, any cultures of *Sporotrichum*, so the agglutination test was not employed. As the clinical diagnosis had been amply confirmed by finding the organism in the pus, I felt quite content to proceed with the treatment.

The histopathology presents a lymph connective tissue, or the so-called syphiloid zone, and an epithelioid or tuberculoid one, with a suppurative area. With the means now at our command, the diagnosis of sporotrichosis has been rendered simple. In the cases usually observed, the clinical picture is quite sufficient. I feel sure, however, that if we study our obscure cases carefully, especially with the view of ruling out sporotrichosis, we shall encounter it more frequently. Examination of the secretions for *Sporotrichum*, cultivating the organism, and the application of the agglutination test of Widal and Abrami, would serve to rule it out. This agglutination test is not specific as against some of the other mycoses, except as to dilutions and time; while the spores agglutinate, the myecelia do not. It has been found positive one year after cure, and has been found negative five years after a cure.

The prognosis in the uncomplicated cases is very good.

The treatment by iodids internally, and the application locally of dilute iodin potassium iodid solution are specific. There seems to be no potential danger of disseminating the organism by absorbing the granulomatous tissues.

REPORT OF CASE

History.—F. T., a man, aged 33, American, married, teamster, referred to me by Dr. John H. Oliver of Indianapolis, Jan. 24, 1921, complained of boils and swelling of the right hand and forearm for the last fourteen months. The patient was the father of three healthy children. He had had measles, whooping cough, scarlet fever and pneumonia, with good recovery. He had suffered a fracture of the right wrist fourteen years previous to this time, and had been a patient in an institution for the insane, where he had been regarded as having dementia praecox of the paranoid form. He escaped from the institution, and, as he seemed to be adjusting himself fairly well on the outside, he had not been disturbed. There had been an abscess on the ring finger of the right hand, which had healed without treatment.

During November, 1920, or fourteen months previous to this time, he had scraped the skin on the back of his right hand while working as a teamster. This injury had refused

Fig. 2.—Initial lesion on dorsal surface of hand and arm, showing resemblance to blastomycosis and to tuberculosis verrucosa cutis.

to heal, and discrete swellings had appeared along the ulnar side of the arm, which had broken down and discharged, leaving contracted scars. The hand became swollen. The ring and little fingers began to draw down, and the use of the hand was gradually lost.

The family history was negative, with the exception that a distant cousin had had bone tuberculosis.

Physical Examination.—The patient was well built. He was poorly developed mentally. The abdomen, chest and nerve reflexes were normal. There were 13,500 leukocytes. The Pirquet reaction was positive. The ring and little fingers on the right hand were drawn down and fixed so that any extension was impossible. The wrist and body of the right hand were swollen and thickened. There were four contracted scars along the ulnar side of the hand. There

was a similar, but larger, lesion on the flexor surface of the radial side of the wrist. On the dorsal surface of the same hand there was an irregular eroded surface, about 8 by 5 cm., composed of sinus openings, pus pockets, and verrucose formations.

This lesion had the appearance of blastomycosis and of tuberculosis verrucosa cutis. A probe pressed into the sinus openings passed deeply into the tissues of the hand.

In the laboratory, culture tubes were inoculated, smears examined and histopathologic studies made by Dr. V. H. Moon of the department of pathology of the Indiana University School of Medicine. In the pus smears, stained with methylene blue, were found pus cells, débris and a number of bacterial species, among which were cocci, and diphtheroid

Fig. 3.—Destruction of head of fourth carpal, and erosive, destructive process involving metacarpal bones.

and other bacilli, such as are found as saphrophytes in open skin lesions.

Smears stained with carbolfuchsin contained no acid-fast bacilli.

Pus examined under coverslips after digestion with 10 per cent. potassium hydroxid contained clear, refractile, oval forms, elongated sausage-like forms, and navicular and short filamentous forms. These were from 3 to 4 microns in diameter, and from 5 to 7 microns in length. The diagnosis from examination of the pus was sporotrichosis. Cultures from the pus were abundantly overgrown by the bacterial species present. No pure culture of *Sporothrix* was obtained.

Histopathology.—The epithelium and papillary processes of the corium were not altered; except at the margin of the ulcer, the epithelial cells were moderately edematous. The dermis was markedly infiltrated with large mononuclear cells, plasma cells and lymphocytes. Very few polymorphonuclear cells were seen. The cellular infiltration was particularly abundant about the sweat glands and about the vascular structures. There was an evidence of a proliferation of fibrous tissues. The sides and floor of the ulcer consisted of a granulomatous proliferation of a tuberculoid character, densely infiltrated with cells. Large epithelioid cells having two or more nuclei were seen in this area, and a few were found having eight or more nuclei. These giant cells were not so large as those found in tuberculosis, nor were their nuclei placed peripherally. Distinct, small, round, granulomatous areas were present, which resembled miliary tuberculosis somewhat, but these consisted entirely of newly formed fibrous tissue and large mononuclear and multinuclear cells. None of these had caseous or necrotic centers.

Roentgen-ray examination by Dr. Ralph L. Locery of the Indianapolis City Hospital revealed periosteal involvement of the head of the radius and ulna, all of the carpal and metacarpal bones, and a destructive osteitis involving the third and the fourth metacarpal, and some of the carpal bones.

We failed to get a satisfactory culture growth, our mistake being in taking pus from a discharging sinus. I feel sure that had we inoculated our mediums from the contents of the lesion, which was located on the flexor surface of the wrist over the head of the radius, we would have had better success.

Treatment and Result.—Iodids were given internally, and iodin potassium iodid solutions were applied locally. The patient's heart rate was 165 when the dose had been increased to 45 grains (3 gm.) of the iodids, and it returned to normal when the dose was reduced to 30 grains (2 gm.).

The man left the hospital, March 23, fifty-eight days after he was admitted, with all lesions healed.

725 Hume-Mansur Building.

ABSTRACT OF DISCUSSION

DR. RICHARD L. SUTTON, Kansas City, Mo.: Sporotrichosis is undoubtedly a fairly common disorder in the Middle West, and in late years many cases are being recognized that formerly escaped detection. I have seen probably thirty cases during the last twelve years. Virtually all of my cases have been of the type shown by Dr. Cregor in his first three, with the earliest lesion on the hand or foot, the abscesses extending upward, along the limb. In none of our cases did we succeed in recovering the organism from the lesion, although, as a rule, our cultures were positive. The disease is one of the agricultural districts, the organism being a not uncommon one in straw and dry vegetable matter. Dr. Cregor's last case was particularly interesting, as the tubercular and gummatous types, while far from rare in France, are seldom encountered in this country. I can recall but one case, that reported by Eisenstaedt. I must agree with Dr. Cregor that after an exhausive study of the organism I hold the same view as Castellani, and Meyer and Aird, that many, if not all, of the numerous French varieties belong in the same category, that it is both useless and confusing to endeavor to separate them into forty-nine different classes. The disease usually responds promptly to iodin medication, possibly supplemented by roentgen rays, and, as a rule, operative intervention is contraindicated.

DR. J. M. KING, Nashville, Tenn.: I enjoyed the paper very much and consider it a straightforward statement of the case. For several years I have been looking for cases of sporotrichosis, and I think that last week I was rewarded with one. A man of about 70 stuck a splinter in his hand last November. He removed the splinter, and to his surprise nodules developed up his arm subcutaneously to within 3

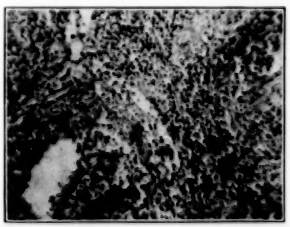

Fig. 4.—Syphiloid outer zone of gumma.

inches of the axilla. His physician treated him with antiseptic applications without any success. The patient was referred to me by Dr. Sayers of Nashville. When I first looked at him I said: "There is a case of sporotrichosis." All of these lesions had been opened, and they contained sinuses opening from one to the other. Dr. Spitz made the cultures for me. He found the mycelium in the smear. I opened the other lesions and got out the typical fluid for other cultures, from which we may get more positive results. Since this case was reported, Dr. Spitz has found the sporothrix in the cultures.

DR. EVERETT S. LAIN, Oklahoma City: I do not know whether this disease is more common with us, but we certainly see more in our section of the country. I think that the reason, perhaps, Dr. Sutton is not seeing so many cases nowadays is that the disease has been so well described

by himself and others that the general practitioners are recognizing it and do not need a dermatologist to make the diagnosis. Even hospital interns now recognize sporotrichosis almost on first sight. It usually yields rapidly to iodid treatment. However, one of my patients came back one year later with a recurrence in the original site. He had been given the iodids but no roentgen therapy. Our previous patients had been given both roentgen rays and iodids.

DR. JOHN H. KING, Nashville, Tenn.: I, like Dr. Lain, think that there are many more cases of sporotrichosis in our section of the country than are reported. One point that Meyer noted was that it could be contracted from an equine strain, and he himself contracted the disease from an equine strain, working in his own laboratory. That was particularly so in Pennsylvania, where 150 cases were reported within a few years, yet only two cases occurred among veterinarians

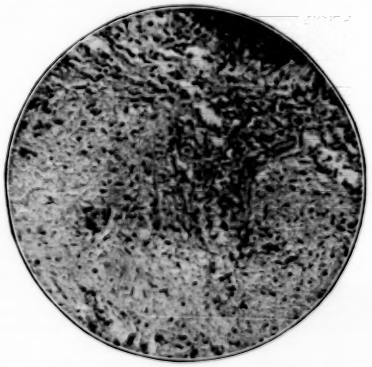

Fig. 5.—Tuberculoid inner zone of gumma.

and others working on these animals. Another point is the combination of potassium iodid and roentgen rays. While we all feel that potassium iodid is a specific in sporotrichosis, I feel that these advanced or deep cases, such as Dr. Cregor has reported, may be greatly benefited by the roentgen rays. For the superficial treatment I feel that we should use a ray with very slight filtration, while for the deeper lesions we should use a heavier ray with a more or less massive dose. In the case of a boy last year, I feel that his recovery was greatly hastened by the roentgen rays.

DR. FRANK W. CREGOR, Indianapolis: In the treatment of the mother and the boy, we attempted to investigate these particular conditions. Dr. Obershimer concluded that the cases developed during the harvesting of the buckwheat, and he offers this as being something that has a tendency to harbor this organism. I cannot see the efficacy of the employment of the roentgen ray in these cases. There is evidently some symbiosis between this organism and others that "live in the shadow," which seemed to succumb when the organisms are destroyed, as they are destroyed by the iodids. In the cases that I have had I have not employed the roentgen ray, and I have never felt the need of it.

Epidemic Due to Repatriation.—The health situation in Poland became more serious during the winter of 1921-1922, as a result of repatriation. In 1921, Poland received 468,000 repatriated persons. As a result, the typhus epidemic, which had been declining since 1920, made alarming progress. There were ten times as many cases (8,600) in January, 1922, as there were (860) in September, 1921. Relapsing fever also spread rapidly, there being 8,100 cases in January, 1922, as against 680 in September, 1920.—*Bulletin No. 3, Health Section, League of Nations*, June, 1922.

ULCERATING GRANULOMA (GRANULOMA INGUINALE) *

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Ulcerating granuloma is also known as granuloma inguinale, ulcerating granuloma of the pudenda, sclerotisizing or sclerosing granuloma of the pudenda, serpiginous ulcerations of the genitalia, granuloma inguinale tropicum, granuloma venerum, groin ulceration, chronic venereal sores and granulomatosis. It is a skin and mucous membrane disease found in the tropic, subtropic and temperate zones. It is an infectious, chronic, indurated, cicatrizing growth on or near the genitals of males and females, with no tendency to glandular involvement or serious impairment of the general health. The majority of the patients are in the period of sexual maturity. Women are said to be more frequently affected than men. The colored races have been thought to have a predisposition to this disease, but a large number of white patients have also been reported.

I have had the opportunity of studying cases of granuloma inguinale in Porto Rico and other islands of the West Indies, and in Panama.[1] Since my return from the tropics, I have also had the opportunity of studying cases of this disease at Bellevue Hospital and at the New York Skin and Cancer Hospital. It was thought that a review of personal experience, both in the tropics and in New York, would be of interest.

TROPICAL CASES

The first case of ulcerating granuloma of the pudenda was in a prostitute, aged 22, who had had the disease for nine years. When first seen, lesions of condylomata lata of syphilis surrounded the areas of the granuloma. Antisyphilitic treatment cleared the manifestations of syphilis, but left the other masses unaltered. The lesions occupied the regions in and about the vulva, perineum and anus. They extended into the vagina and into the rectum. The individual lesions were small papillary tumors about the size of a pea. The odor was very offensive. Bacteriologic investigations of material from this patient's lesions (Fig. 1) disclosed a spirochete which corresponded closely to that described by Wise, and later named *Spirochaeta aboriginalis*. This spiral organism varies very much in form and number of turns. As far as I was able to determine, no other organism, especially *Calimatobacterium granulomatis*, was present in smears from tissue of the lesions in this case.

The second patient was a mulatto, aged 32, who had had the lesions for about three years. The process included the anal mucosa, as well as the skin of the femoroscrotal junction, and extended back to encircle the anus. Several individual lesions were present as satellites to the main masses. The appearance of the lesions in this patient compared favorably with those first described by Conyers and Daniels as "lupoid form of so-called groin ulceration."

* This article is abbreviated in THE JOURNAL by the omission of a bibliography, which appears in the Transactions of the Section and in the author's reprints.

* Read before the Section on Dermatology and Syphilology at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

1. Goodman, Herman: Ulcerating Granuloma of the Pudenda: A Review of the Literature with a Bibliography and Some Observations of the Disease as Seen in Porto Rico, Arch. Dermat. & Syph. 1:151 (Feb.) 1920.

My third patient was a mulatto girl, aged 17, who had had the lesions for about two years. She showed a series of lesions which involved the posterior fourchette, the posterior vaginal wall and the perineal space. The vagina was involved, and felt distinctly hard. There was a marked lymph stasis. The glans clitoridis was as large as an adult glans penis.

The fourth patient was a discharged white soldier who, several years previously, had been operated on for a small papule on the intergluteal fold. He developed a mild mental disturbance and was placed in a mental hospital for a time. When I first saw him, he presented massive, bright red granulations from the tip of the coccyx to the scrotoperineal junction. The opposing anal folds were affected. The border was raised and made up of closely grouped papules covered by a thin grayish membrane and exuding a serous fluid.

Three other patients were seen at Charlotta Amelia, St. Thomas, Virgin Islands.

A patient at the Santo Tomas Hospital, Panama City, was seen after an operation for supposed epithelioma of the penis. The youth of the patient, 23, and the history of the case led me to venture a diagnosis of granuloma inguinale. Dr. Gehringer kindly gave me the only section he had (Fig. 2), and one (Fig. 3) from the extirpated glands. The histopathology corresponded to that of the other cases.

Clinically, the cases seen in the tropics were typical cases as far as tropical experience of others is concerned, for South American authors picture cases which are almost counterparts of them.

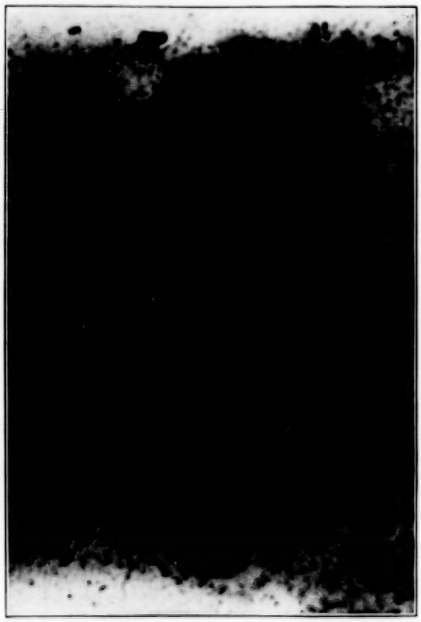

Fig. 1.—Spirochaeta aboriginalis.

NEW YORK CITY CASES

It did not surprise me to encounter cases of granuloma inguinale in New York City. In my first paper, I had written: "The increasing migrations between continental United States and Porto Rico, with the possibility of transferring the infection, is deemed of sufficient importance to warrant the reporting of the first cases diagnosed on our insular possessions." Further in the paper, I stated: "Quarantine measures should certainly be introduced to prevent the transfer of the infection to our southern ports, either from Porto Rico or from South American countries." Once a source of infection has reached the community, it does not take long for numerous cases to arise, especially as there is a certain predilection for the colored race. It has not been thought worthy of any special note that some of the patients had never left the district of their birth.

I recognized my first New York City case at the New York Skin and Cancer Hospital. Dr. Clifton had the case, which for a time was considered oriental sore of the penis, but which, clinically, bacteriologically and therapeutically, was an undoubted granuloma inguinale lesion. Other cases have appeared at this hospital and at Bellevue Hospital.

The penis was the site of the affection in one of our Bellevue Hospital cases, in the service of Dr. Parounagian, and a colored man showed this disease localized to the penis. A colored woman was another patient, and she presented the primary lesion of the disease on the clitoris and prepuce. Another colored woman reported with a large mass in the groin (Fig. 4). It is this type of lesion which warrants more than the others the appellation of granuloma inguinale. Our most recent case is that of a light mulatto girl, aged 19, who came to the clinic with a malodorous crusted saddle-like mass about the clitoris, and a serpiginous papillomatous lesion over the buttock, with a large scar between. She had been operated on at another city institution some years previously. The significant item regarding these two last cases in females was that clinical examination of the present husband in each case disclosed no clinical manifestations of the disease on their genitals. The patient presenting the granuloma inguinale mass had been living with her present spouse for two years. The last girl had been married to her present husband only eight months, and had been pregnant about three months.

The most interesting case of granuloma inguinale I have met is the following:[2]

A man, white, an American, aged 32, presented a mass of hypertrophic, foul smelling, discharging, red papules and nodules, involving the region of the groins, across the pubes, along the femoroscrotal clefts circumscribing the anus and in the depression between the buttocks and the legs. In this region, the clinical appearance was identical with that pictured by De Souza Araujo[3] in a South American case. But in addition, the patient (who had never left New York City) presented similar lesions of the lips and the side of the neck. As far as I know, this is the second case of labial involvement of this disease. The first was reported by Sequeira,[4] in

2. This case has already been reported by Parounagian, M. B., and Goodman, Herman: Ulcerating Granuloma (Granuloma Inguinale): A Report of a Rare Example of This Disease in a Syphilitic Patient, Arch. Dermat. & Syph. **3**:597 (May) 1922.

3. De Souza Araujo: Granuloma Venereo, Trabalho di Instituto Oswaldo Cruz, printed privately in Portuguese, 1917.

4. Sequeira: Ulcerating Granuloma of the Pudenda, Brit. J. Dermat. & Syph. **20**:91, 1908; Proc. Roy. Soc. Med., Dermat. Sec. **1**:57, 92, 1908.

whose patient a genital lesion of ulcerating granuloma was also present. The tongue of my patient presented a smooth atrophy, such as only occurs in syphilis, and the serologic course justified a diagnosis of syphilitic glossitis.

HISTOLOGIC AND BACTERIOLOGIC SUMMARY

Histopathologic studies of cases seen in the tropics or in New York City have disclosed no specific change, but the elongated papillae and interpapillary processes have been present, as would be expected from the clinical appearance of the lesions, with collections of fibroblasts, polymorphonuclear leukocytes, and round cells. There is nothing present to indicate the presence of epithelioma, tuberculosis or syphilis. It would as a general thing be impossible to make a diagnosis from the appearance of the section alone, although it might be suggested.

In the tropical cases and in those seen in New York City, tissue smears were made. In my experience, it is important to get material for bacteriologic study from tissue not contaminated by surface organisms. Under a local anesthetic, a portion of the active margin is well cleansed and removed. The portion is then trimmed so that only deep tissue is made available. This is washed in saline solution, and smears are made by expressing tissue juice from the block.

Fig. 2.—Granuloma inguinale: section from patient at Saint Tomas Hospital, Panama Republic.

In each of the cases except the first and the last, organisms of the *Calimatobacterium granulomatis* type were disclosed. The organisms were within large mononuclear cells grouped about one side of the nucleus. Each germ was inside a capsule. I have also seen extracellular organisms which are assumed by some to be immature forms. It has been difficult to get satisfactory pure cultures, and, in my experience, it has seemed unlikely that the true organism, as seen within the large mononuclear cell, is the organism cultivated. It has been claimed, for example, that the cultural characteristics of the organism of granuloma inguinale place it in the Friedländer or *Bacillus mucosus-capsulatus* group. However, every attempt at cross agglutination or cross precipitation with known Friedländer organisms has failed.

It has been impossible from cultures of the organism grown from granuloma inguinale cases always to secure positive animal inoculations. Although some authors have found the organism grown from their cases to be pathogenic on intraperitoneal injection, mice so injected have also been unaffected, in my experience.

Attempts at experimental autoinoculation have failed in my own experience and in that of others.

The original conception that the organism named *Calimatobacterium granulomatis* (Fig. 5) was a Leishman-Donovan body has assumed less importance with time. Still, one cannot be certain, and until absolute proof is forthcoming to the contrary one may consider such a conception as a possible one. In this connection, it is interesting to speculate as to the method of transference of the disease. Although in Porto Rico I had the opportunity of examining more than 1,100 active prostitutes, but two examples of this disease were encountered among them. No soldier among the 18,000 trained at Camp Las Casas, Porto Rico, had the disease, the two male patients being a civilian and a discharged soldier of the peace time Porto Rican regiment, respectively. As mentioned earlier, two recent women patients with this disease were both married, yet examinations of the respective husbands revealed no lesions. The possibility of an intermediate host must also be borne in mind, especially in the light of the existence of such an intermediate host in other protozoan diseases. From its location, should there be an intermediate animal host for granuloma inguinale, *Pediculus pubis* would be most likely, yet I must report that the diagnosis of pediculosis pubis was made in only twenty-four cases among three regiments of Porto Rican soldiers.

RHINOSCLEROMA AND GRANULOMA INGUINALE

Although clinically and pathologically very dissimilar, rhinoscleroma and granuloma inguinale have been thought to be somewhat related by reason of the morphologic resemblance of the organisms encountered in some cases of each. Rhinoscleroma is supposedly due to a bacillus, gram-negative, easily grown, and of the Friedländer or *B. mucosus-capsulatus* group. This is the link between the two diseases, and is the only link, and a weak one. Rhinoscleroma has a predilection for the respiratory tract; its histology is pathognomonic and is characterized by the presence of three essentials: (1) the foam cells, or nucleated dropsical cells of Mikulicz; (2) the von Frisch bacilli, and (3) the hyalinized cells of Unna. All of these are lacking in granuloma inguinale, for it is admittedly difficult, if not impossible, to demonstrate the organisms in the tissue of granuloma inguinale. A more complete analysis of these two diseases will be published at another time.

LEISHMANIASIS AND GRANULOMA INGUINALE

It has already been mentioned that there is some resemblance between granuloma inguinale and oriental sore in the morphology of the organisms, but certainly in no other way. The biology of these morphologically similar organisms must be very different, as can readily be recognized if one recalls the ease of contagion in oriental sore and the nature of the contagion in granuloma inguinale. Morphologic resemblance must be also admitted with the organisms of tropical ulcer, and to kala-azar. Espundia, or naso-oral leishmaniasis, and gangosa are other tropical diseases which seem to fit in between granuloma inguinale and rhinoscleroma.

SYPHILIS AND GRANULOMA INGUINALE

Clinically, a number of diseases may require differentiation from granuloma inguinale. Ordinary condy-

lomas of syphilis may simulate the condylomatous type of granuloma inguinale. Elephantiasis vulvae of syphilis may assume the appearance of the lymphatic stasis type of the other disease. Gummatous destructions of the external genitalia are not so likely to be confusing, since, despite the name of ulcerating granuloma, this disease is not so destructive as might be implied.

There are, however, many exceptions to the conception that granuloma inguinale is syphilitic or the result of a syphilitic infection, although it is admitted that the two diseases may be concomitant. As mentioned earlier, my first patient had lesions of condylomata lata of syphilis about the area of granuloma inguinale, and other patients had positive Wassermann reactions with no clinical manifestations of syphilis. Intensive and persistent treatment with arsphenamin and mercury made no therapeutic impression on the lesions of granuloma inguinale. In other cases, equally extensive, there had been repeated negative Wassermann reactions. Although spirochetes have been found in a number of cases of granuloma inguinale, the organism has not been found in every case, as might be expected if it were causative. The histology of the lesion is not that of syphilis. Contagion is a much more remote possibility, although it must be conceded that, if comparison in this respect with the gumma lesion of syphilis is insisted on, this feature cannot be used in differentiating the two diseases. However, it is not logical to consider granuloma inguinale a tertiary manifestation, when it is found concomitantly with secondary manifestations in some patients.

Fig. 3.—Section of gland removed from patient. The reaction was only that of chronic inflammation. There was no specific change.

YAWS AND GRANULOMA INGUINALE

I can find no weight of evidence that granuloma inguinale is a tertiary yaw lesion, although I have had some tropical experience with frambesia tropica. Practically the same objections to the theory that there is a relationship would hold true in the case of yaws and granuloma inguinale, as in syphilis and granuloma inguinale.

NEW GROWTH (NEOPLASM)

Epithelioma and carcinoma of the regions ordinarily affected by granuloma inguinale may look like it, and indeed one of the patients had had the growth excised under the diagnosis of malignant growth. Another patient was thought, under clinical examination, to have granuloma inguinale, but pathologic examination definitely established the diagnosis of epithelioma. This patient, in addition, on bacteriologic examination, showed organisms similar to those of Vincent's angina. Some cases of dermatitis vegetans might be confused with granuloma inguinale.

TREATMENT

The treatment of granuloma inguinale with antimony and potassium tartrate, or tartar emetic, has given uniformly good results wherever tried. Intravenously, it is ordinarily given in dilution of 1 : 100. I have always had the solution prepared in distilled or double distilled water, cold, as it appeared that heat decomposed the tartar emetic immediately. Other workers have sterilized their solution by autoclave without ill effects. The dose is 5 c.c. of the 1 : 100 solution every other day, increased by 1 or 2 c.c., until 12 c.c. every other day is injected. Recurrences are common unless treatment is carried on long after the lesions have disappeared.

15 Central Park West.

ABSTRACT OF DISCUSSION

Dr. Joseph Grindon, St. Louis: In 1913, I reported three cases showing some of the features described by Dr. Goodman. In one case neither Donovan bodies nor spirochetes were found, although I felt that there must be a specific organism. Crocker considered it a chronic pus infection, thus ranging it with granuloma pyogenicum. This theory I cannot accept, on account of the rarity of the condition. If it were due to a frequently encountered cause, the result would be frequent. Here, on the contrary, are rare cases, which at the same time show a close adherence to type, a "pattern disease," a terse expression often used by Dr. Hardaway. My researches, cultural and animal, yielded negative results. I believe that, in the minds of some of those who have not seen the disease, there lurks a suspicion of syphilis or chancroids, or something else. Those of us who practice in large cities see extensive chancroids, often in old syphilitics, extending over the groins and down into the perineum. In these cases, the leading feature is ulceration; but not so in inguinal granuloma, and that is why the term "ulcerating granuloma of the pudenda" is objectionable. The disease follows closely Manson's original description. A little nodule in the groin grows slowly, and ultimately becomes a superficial ulceration. It spreads peripherally, and also forms new lesions by auto-infection, through apposition. As it extends, there forms and progresses a peculiar cicatrix, dense, hard to the touch, with the appearance of a hypertrophied scar or keloid, and at the periphery a spreading mass of nodules, with occasional island lesions. The leading features are the nodules, the superficial ulceration and the cicatrization. There is a false appearance of deep ulceration in the folds between the thighs and the scrotum. There you find a deep cleft running along a low ridge, simulating a deep ulcer by the infolding of the affected surface. At the top, the ridge is sharply cut down toward the fold, but in the opposite direction it gradually slopes down toward the border of the diseased area. The disease possesses clinical characters entirely distinct from those of syphilis, chancroid, lupus or epithelioma.

Dr. A. J. Markley, Denver: I should like to place on record a typical case of granuloma inguinale seen in Hawaii, where I think no other cases have been reported. This case was in a negro soldier. It was a penile lesion, which for many months defied diagnosis and treatment, and not until there came to my notice a report of the work on granuloma inguinale done by some South American authors did I have any conception of the character of the disease. Then smears gave the typical picture of granuloma inguinale, and the intravenous use of tartar emetic resulted in absolute cure. There had never been a case of this sort reported in Hawaii.

DR. JEFFREY C. MICHAEL, Houston, Texas: This disease is seen not infrequently in Houston, where there is a rather large negro attendance at the clinic. Four cases of chronic ulcers of the leg have been of interest. Three of the patients were negroes; the other, a white boy. The oldest patient was 24 years of age, the youngest 16. The duration varied from six months to seven years. All cases followed traumatism, slowly spreading until in the case of longest duration a large part of the cutaneous surface of the right leg was involved. The cause could not be determined, and the lesions were

Fig. 4.—Granuloma inguinale: lesions in a colored woman.

resistant to treatment of all sorts, including antisyphilitic treatment. All the patients had negative Wassermann reactions. About this time Lynch reported two cases of chronic ulceration in which Donovan's bodies could not be found, but which responded well to tartar emetic given intravenously. We used this treatment in two of the cases, and they cleared up in a manner which suggested that tartar emetic had something to do with it. The effect of treatment in these patients indicates a probable etiologic connection with granuloma inguinale.

DR. WILLIAM LITTERER, Nashville, Tenn.: This condition is not so rare as we are led to believe. A similar condition prevails among the negroes in the South, especially in females. Within the past year, I have seen five cases in the Vanderbilt Hospital and the Nashville City Hospital. Three of these cases are now under observation. The Donovan bodies have been demonstrated and treatment by tartar emetic intravenously has brought wonderful results. All of these cases have been associated with some venereal infection. Practically all of them have had either a syphilitic or a gonorrheal infection. Three patients gave a four plus Wassermann reaction. Antisyphilitic treatment was given until a negative Wassermann reaction was obtained, but the condition did not yield until tartar emetic was administered, and then the lesions cleared up promptly.

DR. JESSE B. SHELMIRE, Dallas, Texas: I can recall seeing several cases with similar conditions in the Charity Hospital of New Orleans during 1881-1883, in which various treatments were given, but few, if any, patients were cured. In those days, these cases were diagnosed as chronic chancroids, but I believe now that most, if not all, were cases of granuloma inguinale. Three years ago, I referred a case to one of our surgeons. He tried various methods of treatment without success, after which the patient drifted to Hot Springs. He returned to Dallas last December with this condition involving the inner surfaces of the thighs, the entire penis and the abdomen half way to the umbilicus. The lower lip was involved, beginning six months before. The affection began as a papule on the penis seven years ago, some time after a visit to South America. We were then able to make the correct diagnosis, finding the Donovan bodies. He was placed on the tartar emetic treatment and at present is practically well.

DR. HAROLD N. COLE, Cleveland: In the eight cases of this disease that I have seen we were not able to make the diagnosis with the microscope in all. I think there was no question about the clinical diagnosis, and we went ahead and treated them. If you have one of these cases which does not react to other treatment, you may be sure that it is of this type. The action of the drug is almost immediate. One word of caution, however: we found that the kidneys must be watched very carefully. In one case we set up quite a high degree of nephritis.

DR. EARL D. CRUTCHFIELD, Galveston, Texas: This disease has a more protean character than the cases we have seen reported in the literature in the last four or five years. The first case I saw was that of the patient whose picture appeared in Dr. Sutton's textbook. We regarded that as a type of granuloma and were considering typical granuloma inguinale. Four or five cases had been seen in Galveston in the past three or four years which were very similar to those seen in the last few months. We have been able to demonstrate Donovan bodies in ulcers which had existed three or four years. One case was that of an orderly in the University Hospital, which we had diagnosed as chronic chancroid; but we were able to demonstrate the Donovan bodies two or three months ago, and it cleared up very rapidly with tartar emetic. In all of these cases, I have demonstrated the organism of Donovan.

DR. HERMAN GOODMAN, New York: Tartar emetic has been mentioned as a specific, but few men have attempted to dilate on the preparation of the drug for intravenous injection. It was suggested to me that in order to have the tartar emetic act specifically, the solution must be prepared in the cold, using doubly distilled water and chemically pure antimony potassium tartrate. At a symposium in New York, I was surprised to hear mentioned the use of the autoclave or boiling of the solution before use and no untoward results. It had been my impression that such preparation would break up the double salt, and that there would be a reaction. The drug is ordinarily given in doses of 2 c.c. of the 1:100 solution, increasing the dose to 10 or 12 c.c. by adding 2 c.c. to each preceding dose. If the dose is given too rapidly, the patient complains of pain which may extend to the shoulder of the arm used for injection. The pain is so marked after a dosage of 10 or 12 c.c. is reached that the patient often discontinues the treatment. One should keep in mind also that if one does not persist in the treatment, the lesions of the disease will recur. If one finds that ten or twelve doses have cleared the lesions, the patient should be urged to have another

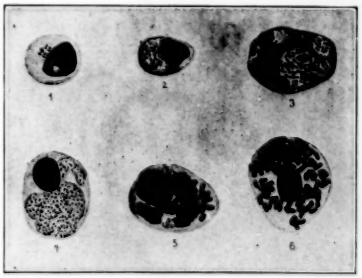

Fig. 5.—Calimatobacterium granulomatis: development of organism (from colored plate of De Souza Arauja).

course of this number of treatments. With insufficient treatment, recurrences may be repeated a number of times, because the type of patient afflicted with this disease ordinarily is difficult to keep under treatment after the symptoms have disappeared. I should like to suggest the use of a complement fixation test with tissue from patients as the source of the antigen. There is no fixed clinical type of granuloma inguinale. Individual cases fit in because we find the organism said to cause the disease, although the free use of the term "Donovan body" is certainly not justified without reservations.

LOCAL BLASTOMYCOSIS

REPORT OF CASE *

MARCUS HAASE, M.D.
E. R. HALL, M.D.
AND
C. H. MARSHALL, M.D.
MEMPHIS, TENN.

Since the first description of blastomycetic dermatitis, in 1894, a great number of dermal and systemic cases have been reported, so that the condition is now generally recognized, and further reports of such cases would be mere repetition and scarcely warranted. However, in reviewing the literature, we could find but few cases in which the disease was localized in some viscera or bony structure. In 1907, Brewer and Wood [1] reported a case of blastomycosis of the spine, in the region of the third dorsal vertebra, without any other manifestation of the disease. Campbell,[2] in 1909, studied a case of blastomycotic osteomyelitis of the right tibia, following a lesion on the skin of the ankle, but having no symptoms referable to the lungs or other organs. Denis,[3] in 1918, reported a case of primary blastomycosis of the larynx, which remained localized for several months, but did not respond to treatment, the lungs, later, becoming involved. Although we have searched the literature carefully, we have not found any other cases of local blastomycosis other than of the skin. However, we feel that there are many more such cases, which have either not been reported or not recognized.

Fig. 1.—Lesion on left cheek.

REPORT OF CASE

A negro man, aged 78, who, previous to September, 1921, had been under the observation of one of us (M. H.) for seven years, with blastomycosis of the neck and face, stated that the skin condition had been present five years before he sought aid. Under potassium iodid therapy, the lesions healed; but during frequent long absences from observation, new lesions appeared about the old scars. However, the patient remained in apparent good health and the skin condition seemed to cause him but little discomfort.

In September, 1921, he came to the university clinic because of a swollen left testicle. The swelling had developed about three weeks previously; and the mass in the left scrotum was three or four times the normal size of the testicle and epididymis. It was impossible to outline the testicle and epididymis, owing to the thickened scrotum and the inflammatory process about the mass. The lower portion of the mass was adherent to the scrotal wall. There was some fluctuation posteriorly, but very little pain on pressure. The vas deferens was large but not nodular. On consultation with the surgeons, it was thought advisable to remove the organ, they believing it to be malignant or tuberculous. On removal, the testicle itself was about normal size and consistency, although the tunica vaginalis was thickened. The epididymis, on the other hand, was several times the normal size, soft, and joined to the scrotum by thick adhesions.

Microscopically, no pathologic condition was found in the body of the testicle, although grossly the tissue had a peculiar, yellowish-brown discoloration. On cutting into the epididymus, a considerable amount of yellow pus was found. Cultures of this material grew typical colonies of blastomycetes. Microscopically, the tissue was invaded by granulomatous tissue containing many plasma cells and leukocytes, mostly polymorphonuclear and giant cells of the Langhans type. Typical miliary abscesses were present, in and about which the blastomycetes were found. These organisms were also found in the giant cells.

The patient made an uneventful recovery from the operation. There was no other positive evidence of the disease in other viscera.

During the seven years that the patient was under observation, he entered the hospital four times. Twice, he was admitted for surgical removal of skin lesions, and at each of these times the physical and laboratory findings were entirely negative. He was admitted the third time for the removal of the testicle, and has been admitted once since for observation. At each of these visits to the hospital, a systematic search was made for any other pathologic condition in the body. Again, the physical and laboratory findings were normal. Roentgenograms of the chest revealed some peribronchial and interstitial fibrosis; but there was no cough, expectoration or other symptoms referable to the lungs. The second roentgenograms did not differ from the first, and apparently the process was inactive and of long standing. At the present time, the patient is well nourished, strong, and very active for a man of his age.

COMMENT

Metastasis to the epididymis is seemingly an extremely rare finding in blastomycosis, as only two or three cases have been reported, and these in patients showing metastases in practically every other organ of the body. That our patient should have the disease for twelve years, and then suddenly develop a metastatic growth in probably the least often involved organ of the body, seems a most striking feature in this case.

That the organism can attack any single viscera or bony structure of the body we feel certain, in view of the cases we have mentioned and our own. No doubt a number of cases are never recognized. As in Brewer and Wood's [1] and Campbell's [2] cases, a diagnosis of tuberculous osteomyelitis was made, but was changed to blastomycosis when cultures were studied. Even microscopically, the true nature of the process can be

* Read before the Section on Dermatology and Syphilology at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

1. Brewer, G. E., and Wood, F. C.: Ann. Surg. **48**: 889, 1908.
2. Campbell, J. L.: Atlanta J.-Rec. Med. **12**: 308, 1909.
3. Denis, F. L.: Ann. Otol., Rhinol. & Laryngol. **27**: 572, 1918.

misdiagnosed, as in our own case the pathologist reported the condition to be tuberculous until he was asked to search for the blastomycetes.

The most probable entrance for the organism is through the skin, although some cases, no doubt, begin in the throat and lungs. In our opinion, the mode of spread is by the blood stream, although blood cultures have failed in most instances. However, Stober [4] and

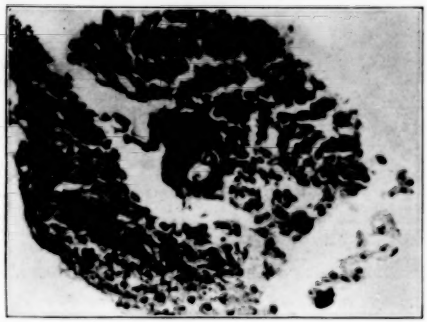

Fig. 2.—Organism in giant cell in tissue of epididymis.

Busse and Buschke [5] reported positive blastomycetic cultures from the blood, and, in a recent systemic case, we obtained a positive growth from blood cultures.

CONCLUSIONS

1. There are cases of local blastomycosis other than dermal.

2. The organism may attack any organ or the bony framework.

3. The organism is probably spread through the blood stream.

ABSTRACT OF DISCUSSION

DR. FRANCIS E. SENEAR, Chicago: This paper is of great interest, reporting a case in which an isolated visceral lesion appeared some time after cutaneous lesions were under control. I do not think the profession looks on blastomycosis as a disease that is often complicated by visceral lesions. Many physicians do not attempt to understand any dermatoses, particularly the recently discovered types; and they regard blastomycosis as involving the skin alone. I have no doubt that many cases have escaped detection because the visceral picture was taken for something else. In 1913, I saw a patient with involvement of the face, hands and arms. At that time, there was a cough, with thick, bloody sputum; and chills, fever and night sweats. Under treatment, the skin lesions involuted in two months, and the patient felt like a new man. A month later he developed a cystitis of blastomycetic origin. Later, he had a prostatitis and, following this, an epididymitis of the left side, which subsided in about a month. In June, 1915, he developed a swelling in the left testicle. With this development, he became impotent. In October, 1915, the changes in the lung again became severe and the patient showed symptoms like those of tuberculosis. In a few months, he had a recurrence of the left epididymitis, and the testicle was involved at that time also. Within two months, an abscess was opened and drained. In May, 1916, he developed a nodule and abscess in the bursa of the left elbow. This disappeared under most intensive potassium iodid therapy, and radium applied locally. It was considered an abscess of blastomycetic origin, without the actual demonstration of the organism. One thing I would like to ask the essayists: In their case the left epididymis was involved as in our case, and I should like to know whether they noticed that the epididymitis was constant. I think it is generally understood that the involvement is more frequent on the left because of the anatomic structure, and it would be interesting to see whether it was true in all cases.

DR. LOUIS E. SCHMIDT, Chicago: In one case which I had under observation, practically the same methods of examination were used for excluding all other conditions. It was originally a skin blastomycosis, treated for a long time, and finally a distinct involvement in the left epididymis took place. There were some blastomycosis lesions on the back and many on the scrotum. The epididymis was removed and the man made a satisfactory recovery. Most of the lesions on the scrotum healed. He disappeared from view for some time but reported later, when the opposite epididymis was involved, and this was also removed. After operating on this side, I referred him to the late Dr. Fred Harris, and I do not know the end-result.

DR. J. M. KING, Nashville, Tenn.: We have had several cases of blastomycosis and one was internally infected. In one elderly man, the neck and left side of the face were covered with lesions that extended onto his lip. Under treatment, most of the lesions healed. Later, they developed in the larynx, and the patient was operated on by a local man at Hopkinsville, Ky. He died a short time afterward. He had had a cough with heavy expectoration.

DR. EARL D. CRUTCHFIELD, Galveston, Texas: We along the Gulf probably see more blastomycetic conditions than do men in other sections of the country. We have come to regard all of these lesions as points of origin for systemic invasion. In the last year, three cases have come under my observation which seem to be cases of systemic blastomycosis with local lesions, one on the hands, another on the elbow and one beginning on the toe. The one involving the hand showed roentgenographically lesions very similar to those of

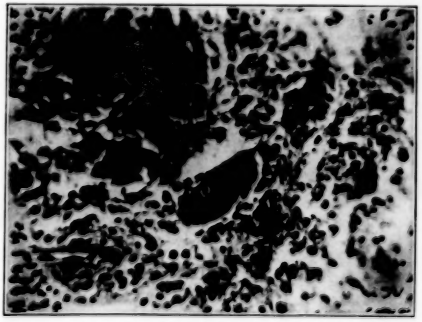

Fig. 3.—Organism in giant cell in tissue of epididymis.

blastomycosis. The man subsequently developed malaise and had a temperature as high as 104 F.; but we were unable to demonstrate the presence of blastomyces in the blood stream. Clinically, however, we felt sure that this represented systemic invasion. The same thing occurred in a girl with a lesion on the elbow which we considered at first to be tuberculous because the roentgenogram showed bone involvement. After the blastomyces were demonstrated, the lesions in the skin healed very readily, only to break down later from an old infection in the bone. This condition, I think, in warm

4. Stober, A. M.: Systemic Blastomycosis, Arch. Int. Med. **13**: 509 (April) 1914.

5. Busse and Buschke, quoted by Montgomery, F. H., and Ormsby, O. S.: Arch. Int. Med. **2**: 1 (Aug.) 1908.

climates is liable to become a systemic disease, and any organ of the body may become involved.

DR. HAROLD N. COLE, Cleveland: We have all seen cases of blastomycosis which did not seem to respond to any of the remedies recommended: arsphenamin, copper sulphate or any of those things. We have tried foreign proteins in some cases and the results are striking, accruing within twenty-four hours. I have seen the cutaneous picture change over night after an injection of 75,000,000 bacilli; in five days we give another dose of 125,000,000, and in another five days we give 150,000,000. A very severe reaction results, the local picture changes, and the condition seems to react more easily to other remedies after this treatment has been given. We have used the typhoid bacillus in this work.

DR. CLEMENT R. MARSHALL, Memphis, Tenn.: I am very glad to have heard these reports of cases, especially those with involvement of the epididymis, because in the literature it is very rare to find cases in which the epididymis was involved. One case was reported by Riley in 1903, in which both sides were involved, and another was reported by Hill, in which the right side was involved; so whether the left side is more liable to be affected or not, I cannot say. In the cases spoken of today, there was not the local involvement as in our case, but an invasion of every organ; so I think that our case is unique, in that it went along for years, and then suddenly involved the epididymis without other visceral metastases. Dr. Cole's treatment with foreign protein should be tried out thoroughly. The treatment with potassium iodid has not been very satisfactory in the systemic cases.

Clinical Notes, Suggestions, and New Instruments

IMPROVED METHOD OF TREATING OBLIQUE FRACTURE OF THE TIBIA

EDGAR D. OPPENHEIMER, M.D., NEW YORK

The problem in treating oblique fractures of the tibia is in maintaining the reduction of the fragments—in other words, traction. The physiologic position is that in which the desiderata are most easily maintained and the objectionable muscle action is best avoided. Sixty degrees' flexion

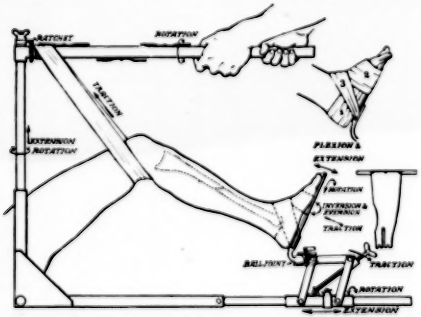

Fig. 1.—Details of apparatus for use in treating oblique fracture of the tibia.

of the knee and 90 degrees of ankle is the position of choice. It is impossible to hold the foot by hand in the correct position while applying plaster.

There is at present no apparatus that offers the following requirements: With flexion of the knee and dorsiflexion of the ankle, (1) to overcome overriding from muscle pull; (2) to obtain countertraction as well as traction; (3) to prevent rotation of the lower fragments; (4) to control eversion and inversion of the foot; (5) to control angulation and lateral displacements, and (6) to permit free application of plaster on obtaining all these corrections and to maintain the corrections in the plaster.

I have therefore found it necessary to devise a fracture frame as in Figure 1. This frame is portable because it is

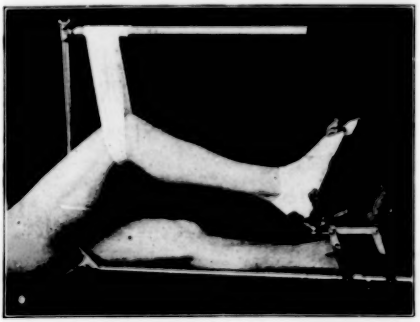

Fig. 2.—Apparatus in use.

readily assembled. It holds the thigh flexed at hip and knee. A large upper sling around the thigh wound on a steel tube turning on a ratchet allows take-up after partial stretching. A foot piece to which the foot is firmly bandaged permits all motions: rotation, inversion, eversion and traction. The foot is fastened to a sole plate by a muslin bandage, as in Figure 1. Two hands alone are required. The first tour of the bandage passes from the top of the plate behind the heel and back again, supporting the foot, and preventing it from becoming displaced posteriorly. The second tour is around the foot and plate; the third, to and fro across the ankle, fastening in the grooves cut in the plate posteriorly. By cutting the first turn at the top, one may remove the plate entirely from the finished cast and apparatus, freeing the foot from all constricting bandages, as each tour of the bandage also encircles the plate. The plate is held in a slide attached to a ball. The ball and socket joint at the heel, allowing all foot positions, is readily and firmly fastened by one screw.

Traction at the fracture site can be gradually increased without disturbing the arrangement at either end. Anteroposterior and lateral pulls at any level can be added. The limb is held free to allow application of the splint without disturbing the patient. When completed and hardened, the thigh sling is removed from the frame and the foot plate from the lower part. The upper sling temporarily causes pressure on the artery and inhibits circulation. This apparently has an anesthetic effect, and no objectionable sequences have been observed. Any amount of pull can be obtained in the frame, but I consider from 5 to 10 pounds enough in the cast. One should allow from ten to fifteen minutes to overcome the muscle spasm and accomplish the stretching, and during this time gradually take up on the adjustments before beginning the application of the plaster bandage, which should include the thigh and entire foot. Anesthesia is unnecessary in setting these fractures. No undue pain is caused in handling patients; in fact, relief from pain is experienced.

While the parts are thus securely held in traction, the patient will relax his muscle spasm, and the hands of the operator are free to manipulate the fragments. It is simple to determine when the position is satisfactory without waiting for the roentgen ray. The bones are palpable subcutaneously. There is a tendency to posterior displacement of the lower fragment, owing to the quadriceps action above

and the ankle flexors below, which must be guarded against. The entire dorsum of the foot presents a surface large enough to stand from 5 to 10 pounds pressure when held securely. The posterior surface of the thigh is adequate for counter-traction. These surfaces are at right angles to the pull, and the parts cannot slide by and cause relaxation. The large surfaces used distribute the tension.

Compound fractures, which are so frequent at this site, can be treated in the same way. Nor does the presence of secondary traumatic lesions, such as multiple or comminuted fractures, lacerations, infections or nerve lesions, give a contrary indication.

I have used this apparatus for five years, and am encouraged by my results and those of others with it to present it.

261 Central Park West.

A NEW HEAD REST FOR SUBOCCIPITAL CRANIOTOMY AND CERVICAL LAMINECTOMY

BYRON STOOKEY, A.M., M.D., NEW YORK

Flexion of the head with obliteration of the folds usually found in the occipital and cervical regions is essential in order to obtain the best exposure in either suboccipital craniotomy or cervical laminectomy. We have sometimes found that sufficient flexion is not produced by the head rest, and traction by an assistant has been necessary. If a retractor is used it is usually applied in the region of the external occipital protuberance where only a scant purchase is possible, and if the retractor slips the tissues are likely to be stripped from the cranium or torn. Such traumatism where the corners of the incision come together is unfortunate, since it is the weakest part of the wound and, unless the tissues at this point are brought together accurately, leakage of cerebrospinal fluid may be favored. In order to obtain flexion and better exposure of the suboccipital region without additional traction, and also free an assistant, the head rest here described was devised.

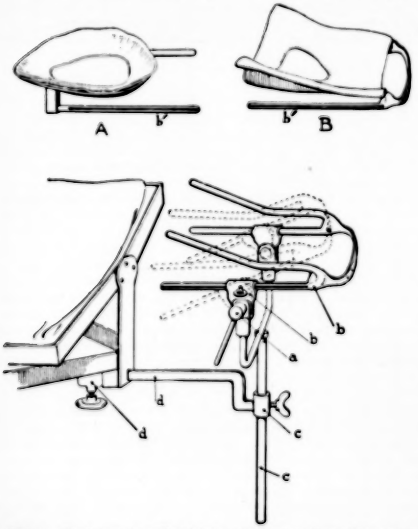

Fig. 1.—Head rest for suboccipital craniotomy and cervical laminectomy, as shown here attached to table. By means of piece *a*, any degree of flexion or extension needed may be obtained. By sliding *b'* through *b*, the head piece may be moved backward or forward; similarly, by sliding *c'* through *c*, the head piece as a whole may be lowered or raised. *A*, metal, and *B*, canvas head piece, either of which may be used by sliding *b'* through *b*.

A principle is used which is generally avoided in any anesthesia, namely, forcing the chin backward. By forcing the chin back, flexion of the head is obtained, the folds of the neck are obliterated, and an excellent exposure of the suboccipital region is gained. With the face down position this procedure does not cause any embarrassment to breathing or any other untoward sign.

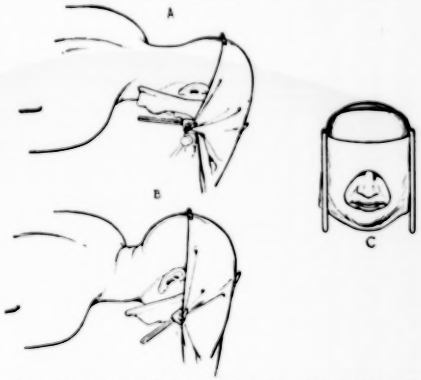

Fig. 2.—*A*, position of patient ready for suboccipital craniotomy or cervical laminectomy; obliteration of folds of neck and exposure of suboccipital region. A sterile towel is pinned through the scalp and to head piece, thus walling off all of head and making position of head more secure. *B*, position to permit approximation of wound in suboccipital craniotomy. *C*, canvas head piece, and position of face as seen from below.

A head piece should fit any facial and cranial configuration; this is not as practicable in a solid metal head piece as in a more pliable material. To meet this, a canvas face piece is attached to the head piece. Canvas is self conforming, adapting itself to any shape of head, pressure is evenly distributed, and no special soreness has been noted, even

Fig. 3.—Position obtained with head rest: obliteration of the folds in the cervical and suboccipital region.

when the anterior edge of the canvas chin piece rested in the open mouth during a prolonged suboccipital craniotomy. An objection may be found in that the canvas piece (Fig. 1 *B* and Fig. 2 *C*) covers the eyes, preventing examination of them during the anesthetic. We have not found this a disadvantage; but if this is found undesirable, a metal piece (Fig. 1 *A*) may be inserted into the head rest at *b* and the same range of movements and adjustments obtained, or additional holes for the eyes may be cut in the canvas.

The head piece permits of two movements, flexion or extension at the joint, *a*, and a backward or forward movement by sliding the face piece through *b*. The relative height of the head piece to the table may be altered by sliding *c* through *c*.

In order to obtain the proper degree of flexion, the backward and forward movement is essential, since the head in relation to the trunk varies with each angle of flexion, and proper adjustment of this variation must be made. As the head piece is attached to the table, the position of the table may be changed without altering the head piece.

When closure of the incision is desired, the tissues may be brought together and suture facilitated by reversing the position of the head from flexion to extension (Fig. 2 *B*). This may be done by loosening the joint, *a*. The large handle to this joint makes this a very simple procedure, which may be done without deranging the operative field.

I felt that before offering this head rest it should be given a thorough trial. It was designed more than a year ago, and has been in constant use during the last ten months at the New York Neurological Institute, for all cervical laminectomies and suboccipital craniotomies, with such complete satisfaction that it has replaced the other types of head rests previously used. The head rest may be procured from the Hospital Supply Company, 155 East Twenty-Third Street, New York.

515 Park Avenue.

MEASURING END-RESULTS AFTER INJURY: A SUGGESTED PERCENTAGE BASIS *

John J. Moorhead, M.D., New York

To appraise the outcome of a given injury we are in the habit of using some such descriptive prefix as "good," "fair," "poor" or "bad," and in other surgical or medical conditions we often make use of the terms "improved" or "unimproved," having an anatomic or surgical cure in mind.

Any such nomenclature is, of course, very confusing; it is not wholly descriptive nor is it reasonably accurate, as in no instance is there any verbal or other accepted standard of rating. This indicates that the present scheme of classifying end-results depends wholly on the personal equation of the examiner. One examiner may rate the outcome as "good"; another, equally competent, may rate the end-result in the same case as "fair." Obviously, both examiners cannot be right, and they differ because each has an arbitrary standard to which they have not mutually subscribed.

It is conceded that it is impossible to set an absolutely exact standard by which to measure end-results; but it should be possible to determine a relatively exact standard on which mathematically to measure the final outcome of a given injury. It will be admitted that for this purpose the use of words is inferior to the use of numerals; hence, for the purpose of attempting to attain to reasonable accuracy, a percentage basis has been chosen. We have a universal standard for weight measurement, for blood counting, for temperature recording and for many other purposes; if, now, we can agree on certain elements common to all injuries, we can with reasonable accuracy obtain some acceptable standard of measurement for end-results. In arithmetic, many problems can be solved by finding a common denominator; in the problem of solving an end-result after an injury, are there any common denominators of admitted value?

* From the Department of Traumatic Surgery, New York Post-Graduate Medical School and Hospital.

FUNCTION, UNION AND CONTOUR

For some three years in my private and hospital cases I have made use of a simple plan based on three main elements, common denominators, to determine by a percentage basis the outcome of injuries. It should be conceded that the aim of treatment in any surgical or medical condition is restoration of function; hence function is the first element to be rated.

Next in importance is the state of repair of the injured part, and this is denoted by the term union.

The last element is the appearance of the injured part, and this is denoted by the term contour.

These three words or inclusive terms, function, union and contour, are chosen arbitrarily, and other descriptive words or terms can be made to serve equally well; but the gist of the whole matter is that we should agree on certain prevailing factors and allot to each a numerical value in terms of percentage.

There will be little controversy in according function the maximum rating in this arbitrary classification of 100 points for a perfect end-result. Hence 60 per cent. of the total is allotted to the element function. Now comes the difficulty in rating the other elements, whatever they may be named. It is well to remember in this connection that after some injuries, function is practically perfect despite a most imperfect anatomic or surgical result. Witness the good flexion in an untreated wrist injury that indisputably was a Colles' fracture. Likewise a fracture of the clavicle with fibrous nonunion and a visible knobbing when the fragments overlap. Yet the "function" in both instances may be perfect; how can we rate such a result, unless we use some such inclusive terms as "union" and "contour"?

Accordingly, we arbitrarily allow a rating of 20 per cent. to each of these elements, and thus our percentage formula now becomes: function, 60 per cent; union, 20 per cent; contour, 20 per cent. = 100 per cent. for a perfect result.

Function denotes the capacity to perform.

Union denotes the state of repair.

Contour denotes the external appearance.

In other words, we rate our result on "actions" (function) and "looks" (union and contour). The appraised value of an automobile is based on the same elements of "actions" and "looks," irrespective of the make or the model. There are, of course, many accessory factors to take into account in judging the value of an animate or inanimate piece of machinery; but, after all, in each instance actions speak louder than looks.

APPLICATION OF THE STANDARD

Given, then, a standard of end-result values based on some such classification as the preceding, how are we to apply it?

So far as the closed cavities of the body are concerned (cerebral, spinal, thoracic, abdominal), the problem is not particularly difficult because a damaged brain, spinal cord or thoracic or abdominal viscus will register in a fairly accurate and routine manner, irrespective of such factors as sex, age, occupation or nationality. The chief difficulty pertains to the extremities, and this, after all, will become clearer if we reflect for a moment on the essential function of each extremity.

The upper extremity is primarily related to such coordinated acts as the function ("sense") of grasp, of pull, of push, of touch; and their relative importance is in the order listed for the majority of human beings. An artist, for example, is much concerned over the loss of the "sense" of grasp and touch. A workman, on the contrary, will become almost a derelict from the loss of the "sense" of grasp.

The lower extremity is primarily related to such coordinated acts as the function ("sense") of locomotion and equilibrium. These factors in combination enable us to walk, run or climb, and their hypofunction or hyperfunction is again determined in part by such components as age, sex and occupation.

Now, perfect function is the mutual accord between bodily hard and soft parts; in other words, the sum of skeletal

(bone), joint, muscle, tendon, vascular, neural and glandular tone.

If we would measure the loss of or damage to any of these, we must assign to all of them certain common denominators possessed by all. It is submitted that function, union and contour are terms sufficiently broad for standardizing purposes on a percentage basis, at least much better than the former practice of using words like "good," "fair," "poor" or "bad."

It is understood that perfect function is accorded 60 per cent., perfect union 20 per cent. and perfect contour 20 per cent., a sum of 100 per cent. for a perfect score in each element. Now, if for example function is three-fourths perfect we allow three fourths of 60, or 45; if union is one-half perfect we allow one half of 20, or 10; if contour is one-fourth perfect we allow one fourth of 20, or 5. So our result is the sum of 45 + 10 + 5 = 60 per cent. result. If we wish to bring these descriptive numerical terms in line with our former use of words, we can say that a result of 80 + is good; 60 + is fair; 40 + is poor; 20 + is bad.

Further, we may say, for example, that a 75 per cent. end-result is the equivalent of a 25 per cent. deduction from a perfect outcome; in other words, in this example, we may by this method mathematically infer that the injured person has suffered to the extent of 25 per cent., based on a former capacity of 100 per cent., taking all three elements into account. Further analysis will show just how much of this loss is allotted to function, how much to union and how much to contour.

PRETREATMENT ESTIMATE

Again, this plan permits us to make a pretreatment as well as a posttreatment estimate of the condition, and, of course, gives valuable data for the successive follow-up observations.

For example, in a recent case of fracture of the left scapula, double fracture of the left humerus (upper zone compounded) and left radius, the patient being a bicycle police officer, aged 36, the pretreatment estimate was: F (function), 20; U (union) 0; C (contour) 5 = 25 per cent. In other words, untreated, the upper extremity showed a 75 per cent. loss; it might have been greater in an older person with another occupation; at his age, while he never could resume his work as a bicycle policeman, he could do clerical work, and his grasp power in that hand would not have been much impaired even for certain manual types of work.

However, three months later all the fractures had united, and the end-result was in terms of inability fully to raise the shoulder and supinate the forearm, and there was also a slight bowing of the latter. Hence the rating was F, 50; U, 15; C, 18 = 83 per cent end-result, or 17 per cent. loss. His F would probably increase later to 55 per cent., and thus it can be reasonably predicted that the final result here will be 88 per cent.

A man of 62 had a compound supracondyloid infected fracture of the right femur six months before coming into my service. A previous operation had been performed. The lower limb was bowed markedly; it was 4 inches short; the knee was stiff, and there was an adherent transverse scar over the insertion of the quadriceps. There was a sinus and exposed bone over the external condyle of the femur. The pretreatment estimate was: F, 20; U, 5; C, 5 = total 30 per cent., or 70 per cent. loss in the limb before treatment. After operation and before the plaster cast had been removed we were able to determine that the shortening had been reduced to 2 inches, the limb was straight, and the dead bone had been removed.

Then the provisional rating could be estimated as F, 40; U, 10; C, 10 = 60 per cent., or 40 per cent. loss, compared with a former estimate of 70 per cent., based on exactly the same factors.

Comparing this degree of accuracy with any other form in which such terms might be used as "improved," "benefited" or "fair result," we can with reason claim greater exactitude of expression.

A MEANS OF AVOIDING CONTROVERSY

Surgeons are often called on to determine the end-result of a given injury so that legal, compensation or insurance phases may become a matter of record or a subject of review by constituted authorities.

It is submitted that a plan of this sort avoids much confusion and controversy. It should not be difficult to agree on what constitutes restoration of the three elements, function, union and contour. Having thus agreed, the relative value of each can also be determined with reasonable accuracy. The problem is qualitative first and then quantitative.

A further advantage is that the element function is rated as three times more valuable than union or contour. This is as it should be, and the profession at large does not yet fully appreciate that the functional end-result is the main object of treatment. But it is apparent that the laity generally regards union and contour as the main elements, and often a surgeon is unjustly blamed because these factors more than function are emphasized. Suits for malpractice are frequently the outcome when such an interpretation of an end-result prevails, notably in fractures in which unjustly the roentgenologic takes precedence over the clinical or functional result. Finally, such a method of rating can be applied to many surgical or medical conditions, and thus this suggested percentage basis has wide applicability.

115 East Sixty-Fourth Street.

DEATH FROM FOOD POISONING DUE TO BACILLUS BOTULINUS

JAMES B. CUTTER, M.D., SAN FRANCISCO

P. A. A. and T. P., two men, ate tomato-onion-chili sauce at noon, June 16, taken from the last of twelve bottles, home made, that had been used during the winter. While acrid and hot, its taste was not much different from that eaten previously. Slight gastro-enteric symptoms followed within a few hours, not sufficient to cause alarm. When I saw them next noon the patients complained of slight dizziness, vertigo and dryness of the throat, which was attributed to cider that they had drunk. When I was called the following morning, further inquiry elicited the information that the men had eaten the sauce described and that the housewife, thinking it "smelled too strong," had thrown it out. The symptoms at this time were diplopia, weakness, loss of accommodation, ptosis, dryness of the mouth and pharynx, constriction of the throat with difficulty in speaking and swallowing, and still slight gastro-intestinal symptoms. In spite of all efforts at treatment, one patient died on the 18th at 5 a. m. from failure of respiration, and the other patient on the 19 at 11:30 a. m. from failure of respiration and great exhaustion. Extracts made from a specimen of the tomato-onion-chili sauce by representatives of the California State Board of Health, and by Dr. Meyer of the Hooper Foundation Laboratory at San Francisco, revealed *Bacillus botulinus* in virulent type. Injection into mice caused death within sixteen hours. Further study is still being made.

The sauce provided an acid medium, the first instance recorded in which *Bacillus botulinus* had developed under these conditions.

Children's Hospital.

Thinking.—The chief function of the mind is thinking, and it is doubtful whether an organ can retain its maximal health if its function is not adequately exercised. But exercise must be guided and trained, especially in the young, if it is to attain its object. A game of cricket in which the participants are ignorant of the rules and uninspired by any keenness is worse, as an educational exercise, than no game at all. Is thinking a function that needs no practice, no training? Hughlings Jackson, whose contributions to psychopathology, in advance of his time like most of his work, have been revived and admirably presented to us by Dr. Maurice Nicoll in a recent article on regression, was in the habit of exhorting his house physicians to set aside some portion of the day or night for thinking.—Buzzard, *Mental Hygiene*, July, 1922.

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SATURDAY, SEPTEMBER 2, 1922

THE DANGER OF DOGMATISM IN SCIENTIFIC FIELDS

Nothing can be more helpful to the coming generations of physicians than a wholesome realization of the futility and occasional danger of dogmatism in their fields of endeavor. The development of a reasonably critical attitude of mind may not be compatible with the inertia of intellectual contentment; it is usually far easier to accept the traditional statement and act in accordance with it than it is to modify one's performance in the light of diligent inquiry. Nevertheless, it requires a mind open to radical changes for participation in that which is designated as progress. New discoveries and constructive thinking lead to evolution of knowledge and revolutionary practices. Advancement in professional fields means the abandonment of much that is old and the avoidance of unpromising avenues. Since practice, in medicine, is often based on dogmatic pronouncements, it is likely to fail in its objects when the premises become unstable.

For generations it has been assumed that patients with chronic interstitial nephritis must be poisoned by their own wastes. It was a further natural, though by no means logical, assumption to conclude that urea is the offending toxic agent; hence urea production must be decreased and its elimination increased. But, as Folin [1] has remarked, the enormous quantities of urea which can accumulate before the uremic patient finally dies indicate clearly that urea is not toxic, a fact also suggested by the extraordinary urea content found normally in the blood of certain species. The textbooks and other dogmatizers have hailed suprarenal secretion as the effective agent in controlling blood pressure; yet Hoskins [2] has shown clearly that the evidence as a whole militates against the supposition that blood pressure is ordinarily maintained by the stimulating influence of small quantities of epinephrin continuously secreted.

Cholesterol, being a conspicuous and easily recognized component of the bile, both under normal conditions and in the form of biliary concretions, has furnished the theme for unending speculation which has all too often been accepted by the uncritical as fact. It is suggested by various writers that cholesterol results from secretion of the biliary tract epithelium, from liver parenchyma degeneration, from red cell disintegration, from general tissue wear and tear, from food cholesterol, and from the suprarenals and other glands of internal secretion. Nobody, Whipple [3] naively adds, has as yet suggested that cholesterol is derived from the wear and tear of the cerebral cortex under the stress of environmental conditions.

In recent years the microchemistry of the blood has furnished numerous data to arouse the interest of the physician. Too often, however, he has stretched the significance of the findings beyond the limits of dependable deduction. Thus, Ambard's coefficient and similar mathematical expressions have been endowed with a reality soon to be shattered by subsequent developments. Folin [1] has admitted that for the present the question of the ammonia content of the blood can have no bearing on any clinical problems; while Behre and Benedict's [4] studies of creatinin in the blood have raised doubt as to the very existence of this much estimated constituent.[5] At any rate, the foregoing illustrations should suffice to indicate the desirability of keeping an open mind in science and its applications.

THE RELATION OF AUTOLYSIS TO ATROPHY

Atrophy is a phenomenon that is ordinarily regarded as pathologic in character, although this is by no means always the case. It may be questioned, at any rate, whether the disappearance of certain bodily tissues with disuse or diminished function—for example, the atrophy of the mammary gland at the end of lactation—is not in reality a physiologic reaction. After Salkowski's pioneer studies in this field in 1889, the relation of autolysis to atrophy began to receive considerable attention.[6] There followed a decade or more during which only occasional reference to the subject was made. Recently, however, with increasing knowledge of the importance of hydrogen ion concentration in many physiologic and biochemical reactions, the possible rôle of autolysis in the bodily processes has come into new prominence.[7]

It seems to be well established that the long-known "autodigestion" of most tissues kept under suitable conditions postmortem is due to enzymatic changes, not to bacterial influences alone. The possibility of both aseptic and antiseptic autolysis has been demonstrated

1. Folin, Otto: Nonprotein Nitrogen of Blood in Health and Disease, Physiol. Rev. **2**: 460 (July) 1922.
2. Hoskins, R. G.: The Relation of the Adrenals to the Circulation, Physiol. Rev. **2**: 343 (July) 1922.
3. Whipple, G. H.: The Origin and Significance of the Constituents of the Bile, Physiol. Rev. **2**: 440 (July) 1922.
4. Behre, J. A., and Benedict, S. R.: J. Biol. Chem. **52**: 11 (May) 1922.
5. Does the Blood Contain Creatinin? Current Comment, J. A. M. A. **79**: 220 (July 15) 1922.
6. Levene, P. A.: The Harvey Lectures **1**: 73, 1905-1906.
7. A timely review is given by Bradley, H. C.: Autolysis and Atrophy, Phys. Rev. **2**: 415 (July) 1922.

for many glandular tissues in particular. Muscle tissue will also autolyze to some extent, but not so readily as epithelial structures. Thus, when a piece of liver is allowed to remain uncontaminated by bacteria, its proteins are gradually disintegrated with the production of typical products of alimentary digestion of the same substrates. Connective tissues are resistant to such autolytic changes. The rate of autolysis and its extent are profoundly influenced by the reaction of the tissue mixtures. When the latter are alkaline or neutral, the hydrolytic change is limited or entirely suppressed; in an acid medium the self-digestion proceeds much more vigorously, there being an optimal concentration of acid at which a maximal result is attained. Bradley [1] has summarized our present knowledge of the possible relation of autolysis to the various normal and pathologic atrophies by pointing out that the normal tissue cell is maintained at the reaction of the blood, or p_H 7.4. So long as its metabolic processes remain in equilibrium with its blood and lymph supply, there is no accumulation of carbon dioxid, sulphuric acid, phosphoric acid, or acids arising in intermediary metabolism. Neutralization of these acids, further oxidation of some of them, diffusion out of acid ions and diffusion in of basic ions go on at such rates that the resultant reaction remains constant. On the other hand, as Bradley points out, any prolonged increase of metabolism within the cell without compensatory increase of the circulation about it would lead to an acidotic shift within the cell. If acid production exceeds the capacity of the mechanisms to dispose of it, autolysis and atrophic changes of mass are likely to ensue.

This explanation has long been applied to such conditions as liver atrophy. Various circumstances, such as poisoning and altered circulation, render the hepatic cells acidotic, whereupon they die and autolyze rapidly, often leaving only a vestige of connective tissue supports. In various forms of war gas poisoning, the alveolar cells of the lungs die and autolyze rapidly on account of the high acidity first developed by the chemicals used. Bradley has interpreted the atrophy of the mammary gland after lactation as a typical physiologic example of autolysis resulting from diminution of the blood supply. The latter is assumed to result from the pressure of stagnating milk in the distended glands. On this hypothesis the bandaging of the breast to avoid overproduction of milk initiates pressure stasis and asphyxial cell acidosis. Likewise, the postpartum resolution of the uterus is regarded as an autolytic atrophy initiated by the contractions which must greatly diminish the blood and lymph supply of this muscular organ. The slow generalized atrophies of advancing age may be related, on such a theory, to a blood supply growing gradually less efficient. The softening of overgrowths and neoplasms is regarded by Bradley as an added example of autolysis induced by alteration in the blood flow. This may be caused, he adds, by the contractions of freshly formed fibrous tissue, so that capillary tufts are pinched off and their dependent tissues autolyzed. The resistance of the brain and heart to autolysis may be ascribed to the unusually adequate blood supply which protects them from lack of oxygen and consequent acid-forming conditions. If atrophy is a consequence of limited circulation, it seems likely that growth will require an abundance of blood supply and a mechanism that maintains neutrality. This is doubtless true not only of normal growth but also of pathologic neoplasms.

LIGHT AS A THERAPEUTIC AGENT

That sunlight is beneficial to those forms of living matter represented by green plants is an every-day observation. Through the intermediation of chlorophyl, light energy is stored under conditions most advantageous to mankind. There is a widespread conviction that sunlight is health-giving to man as well as to vegetation; but proof of this traditional belief is not so easily secured. Sunlight is only one of numerous environmental factors to which the human organism is subject, and they cannot readily be dissociated so that each can be charged with its specific responsibility for well being or the reverse, as the case may be. The physics of radiation, including the phenomena of light rays, has progressed to a stage, however, at which it may be expected that the behavior of light to living matter in the animal as well as the plant kingdom will become elucidated. A recent writer [1] has pointed out that although the physiologic effect of sunlight seems at first sight indefinite and of dubious importance, the action of far ultraviolet light on normal tissue, and the action of near ultraviolet light under certain pathologic conditions, have been investigated enough to show that there are well defined effects due to light, closely related to the physiologic results of exposure to radium and the roentgen rays.

It would be manifestly unfair to say that heliotherapy is an entirely unexplored field; but it will scarcely be denied that its present claims and its accomplishment are essentially based on empiricism. To admit this is not derogatory to the possibilities of medical treatment through the agency of light rays, but rather a challenge to promote the scientific aspect of the subject. The latest studies of the sunlight treatment of rickets, notably those of A. F. Hess and others in this country, should give a marked impetus to the investigation of the physical factors as well as the clinical results. Recently Kramer, Casparis and Howland [2] have again demonstrated the healing of the rachitic process in the bones of rachitic children through systematic exposure to the rays from the mercury vapor quartz lamp. So

1. Clark, Janet H.: The Physiological Action of Light, Physiol. Rev. **2**: 277 (April) 1922.
2. Kramer, B.; Casparis, H., and Howland, J.: Ultraviolet Radiation in Rickets, Am. J. Dis. Child. **24**: 20 (July) 1922.

far as could be judged, the healing of the bones following irradiation occurred at about the same time that it does after the administration of cod liver oil. The changes in the phosphorus concentration of the blood serum were identical with those observed after treatment with cod liver oil.

The instance cited is a notable one for heliotherapy. In a review which can be commended to physicians, Clark [1] has suggested other fields in which the already evident possibilities of light therapy deserve experimental consideration from a clinical standpoint. The pioneer work of Finsen in the treatment of lupus vulgaris emphasizes the importance of considering a diversity of forms of radiant energy in skin affections. The relative safety of treatment with ultraviolet rays over roentgen-ray exposure should add to the desirability of careful consideration of the respective merits. In tuberculosis, especially surgical tuberculosis, heliotherapy has long had advocates. The observations made have warranted the suspicion that light of short wave lengths, which is known to have marked bactericidal effects, may not be without salutary influence in the treatment of wounds.[3] Other suggestions might be cited, while the familiar inflammatory reaction known as sunburn, erythema solare, is an omnipresent reminder of the potency of absorbed ultraviolet light. It should be remembered that the potent rays of shorter wave length do not penetrate glass. The shorter the wave length, the smaller the layer of skin that will absorb the rays. Artificial lights, if glass covered, are therefore harmless and therapeutically weak. Sunlight rarely contains enough far ultraviolet rays to produce injury. Consequently, heliotherapy that demands highly potent effects must look to artificial sources of radiation. The quartz mercury arc and bare metallic arcs are known to belong in the potent class, and, as has often been warned, may be extremely injurious, so that the eyes should be protected from them. With the newer physics, physiology and pathology of light rays, a better therapy is likely to develop.

3. Brieger: Strahlentherapie **8**: 657, 1918.

ANOTHER PLEA FOR CONSERVATISM IN INTRAVENOUS MEDICATION

Considered from a purely theoretical standpoint, it is not surprising that the possibilities of intravenous therapy have made a strong appeal to the medical profession. The circulation of the blood affords the shortest route for the transmission of drugs to diseased or disordered tissues, except in the instances in which superficial defects may occur. Even in the case of the skin, effective medication, like adequate nutrition, may in most instances be secured best through the medium of the blood supply, the use of local applications being limited for the most part to the relief of external physical conditions or the destruction of parasitic organisms that have invaded the outer layers. Furthermore, intravascular medication brings drugs into contact with micro-organisms that may inhabit the blood stream and the cells that belong in it. Little wonder, then, in view of such appealing therapeutic prospects, that propagandists for a mode of using drugs scarcely thought of before Baccelli's [1] introduction in 1890 of the intravenous injection of quinin for the treatment of malaria, should have secured a sympathetic audience in recent years.

As has frequently been pointed out in THE JOURNAL, however, there are serious limitations to intravenous medication which are likely to be forgotten or overlooked in the enthusiasm for a promising procedure. They involve both disappointments and dangers, many of which were summarized with judicial frankness in the chairman's address [2] before the Section on Pharmacology and Therapeutics at the St. Louis session of the American Medical Association. Not the least in importance are the difficulties of technic which form a stumbling block for all too many physicians. An unbiased, erudite observer must often be astounded at the crudeness—let it be admitted—which characterizes the routine manipulative technic of persons supposedly versed in the anatomy, physiology, pharmacology and psychology of man. It sometimes seems as if the keeping of case records, versatility in conversation, and blind faith in traditional office routine had usurped the place of intelligent ingenuity in the conduct of some of the simplest and most fundamental operations of medicine. Sometimes more attention is given to the preparation of elegant vehicles for simple drugs than to common procedures of examination and instrumentation. Yet both features may involve the sense organs of the patient as well as the outcome of his malady.

Even if the word "faulty" could be discarded in referring to current technic, if asepsis were inevitable, if subcutaneous, intramuscular and intravenous injections were made painless and perfect rather than bungling, there are hazards in intravenous routes that Voegtlin [2] has clearly emphasized. The blood is not an indifferent fluid; it is a nicely "balanced" solution. As Voegtlin points out, we know today that the chemical composition of the blood and its physicochemical properties, such as osmotic pressure, hydrogen-ion concentration and colloidal state, are maintained with remarkable constancy and appear to be essential to physiologic well being. A sudden change in reaction, the production of precipitates and subsequent thrombosis in vital organs, the overwhelming of sensitive tissues, such as the cardiac and nervous structures, with high concentration of potent drugs—these are a few illustrations of the untoward possibilities in a

1. Baccelli, G.: Tr. Tenth Internat. Med. Cong. **2**: 138, Part 5, 1890.
2. Voegtlin, Carl: The Limitations of Intravenous Medication, J. A. M. A. **79**: 421 (Aug. 5) 1922.

process that often means "more haste and less speed" in its outcome. These are not hypothetic musings; they have been ascertained to occur all too frequently. The need of rational conservatism has not yet passed for intravenous medication.

Current Comment

DOCTOR STEPHEN SMITH

In 1850, Stephen Smith took up the study of medicine at Columbia University "as a preventive measure against the recurrence of a form of indigestion" from which he had suffered since childhood. Last week he died at the age of almost 100 years. Perhaps he was correct in attributing his longevity to his knowledge and to his ability in applying his knowledge of medicine. However, not every man is a Stephen Smith. His career was marked throughout by a fiery enthusiasm for cleanliness and sanitation. He was among the first to realize the importance of the health department in the scheme of municipal organization. In fact, he drew up, with Mr. D. B. Eaton, an attorney, the health bill which created the modern New York health department, a most important feature of the bill being its establishment of the police powers of health departments. In 1871, the American Public Health Association was organized, and Stephen Smith became its first president. It was especially fitting that the fiftieth anniversary celebration of this organization should have given to him such great honor as was accorded him at the last annual session. To the very last, Stephen Smith was an interested, active observer of the health progress of our country. His life witnessed a change from the uninformed misery, disease and death of one century to the enlightened sanitary, hygienic living of the next. Few men have been privileged, as was this pioneer physician, to see the development of a complete health civilization.

ORIGIN OF THE CEREBROSPINAL FLUID

Nearly a century has elapsed since Magendie,[1] in 1825, first clearly described the physical properties of the cerebrospinal fluid. Always a body fluid of scientific interest, it has in comparatively recent times acquired a new sort of importance because of the diagnostic and prognostic indications that can often be derived from its chemical, bacteriologic and serologic aspects. Consequently, it seems strange that after these many decades of study devoted to the cerebrospinal fluid some of the most fundamental questions with regard to its origin and function remain unanswered or in dispute. Although most of the modern investigations on the source of the fluid have been based on the hypothesis that the choroid plexuses elaborate the greater portion of it, this view has been challenged by Becht.[2] In an elaborate review of the subject, Weed[3] has attempted to reconcile the conflicting opinions and the alleged confirmatory evidence. Dandy[4] has been able to produce unilateral internal hydrocephalus by obstructing one foramen of Monro; extirpation of the choroid plexus in such an obstructed lateral ventricle prevented the development of an internal hydrocephalus. This experiment Weed regards as the strongest single substantiation of the hypothesis that the origin of the cerebrospinal fluid is associated with the plexus. Nevertheless, in spite of the corroboratory favorable histologic structure of the choroid plexuses, and the substantiating effect of pharmacologic agents in harmony with a secretory function, as well as anatomic and embryologic indications, Weed now believes that these plexuses cannot be the sole sources of the fluid. In fact, there is some anatomic evidence that the perivascular spaces also pour a certain amount of fluid into the subarachnoid space, where it mixes with the liquids produced in the cerebral ventricles.[5] Such an addition, Weed concludes—significantly for the diagnostician—probably accounts for the reported differences between subarachnoid and ventricular fluids on serologic and chemical analysis. The ependymal cells lining the cerebral ventricles and the central canal of the spinal cord may also contribute a minimal addition to the intraventricular cerebrospinal fluid. With the precise source, mode of production, amount and migration of the latter still partly undetermined, the resourcefulness of the investigator is challenged to afford an answer.

1. Magendie: Recherches sur le liquide céphalo-rachidien, Paris, 1825.
2. Becht, F. C.: Am. J. Physiol. **51**: 1 (Feb.) 1920.
3. Weed, L. H.: The Cerebrospinal Fluid, Physiol. Rev. **2**: 171 (April) 1922.
4. Dandy, W. E.: Tr. Am. S. A. **37**: 397, 1919.
5. Weed, L. H.: J. M. Res. **31**: 93, 1914.

THE ARTIFICIAL SYNTHESIS OF UREA

Nearly a century has elapsed since the synthesis of urea, or carbamid, was accomplished by F. Wöhler, in 1828. The accomplishment was one of no small significance, since it represented the first success in the production of a substance organic in character and found as a natural component of the living body. The synthesis of urea dispelled, once for all, the idea that some special "vital force" is required to evolve the organic constituents of plant and animal tissues. The demonstration of what the chemical laboratory, directed by human ingenuity, can accomplish in imitation of nature promptly emboldened scientists to attempt the artificial production of numerous other naturally occurring substances, with a degree of success attested by many of the accomplishments of modern organic chemistry. The original synthesis of urea involved the molecular rearrangement of ammonium cyanate. This cannot be analogous to the genesis of urea in animals. In them it now seems most likely that ammonia and carbon dioxid represent the immediate precursors of the end-product of nitrogenous metabolism. It was not until 1882, however, that Mixter[6] succeeded in synthesizing urea from ammonia and carbon dioxid by passing the mixed gases through a hot tube at atmospheric pressure. Quite recently, Krase and Gaddy[7] of the Fixed Nitrogen Research Laboratory of the Amer-

6. Mixter, W. G.: Am. Chem. J. **4**: 35, 1882-1883.
7. Krase, N. W., and Gaddy, V. L.: Synthesis of Urea from Ammonia and Carbon Dioxide, J. Indust. & Engin. Chem. **14**: 611 (July) 1922.

ican University, Washington, have succeeded in perfecting this synthesis to a point at which it promises to be applicable on a large scale for industrial uses. An intermediate product is ammonium carbamate, which likewise was much discussed in the textbooks of a few years ago as a likely antecedent of urea in the body and was charged with responsibility for some of the toxic symptoms observed under conditions of disturbed liver function in which a deficient conversion of nitrogenous catabolites to urea was alleged to occur. It seems likely, therefore, that the centennial of the first artificial synthesis of a body constituent of organic character may be celebrated by the production on an elaborate factory scale of the same product, urea, in ways not widely divergent from those through which the same compound arises in the living organism.

THE AMERICAN MEDICAL DIRECTORY

The Biographical Department of the Association is now actively engaged in compiling and revising the material for the Eighth Edition of the American Medical Directory. The directory is one of the altruistic efforts of the Association in the interest of the medical profession as a scientific organization, which means, ultimately, in the interest of the public. It is a book in which are found dependable data concerning every physician licensed to practice medicine in the United States and Canada, all being treated alike. This note is inserted to ask the cooperation of those readers of THE JOURNAL who have changed their residence, or their office, since the previous revision, two years ago. If there is any change to be made in the data appearing in connection with your name, communicate at once with the Biographical Department of the American Medical Association.

CHRONIC STARVATION AS A DISEASE

Prolonged undernutrition is a condition that occurs in a variety of disorders. In its clinical aspects it is usually an indirect consequence of conditions which for some reason or other interfere with adequate food intake, so that the phenomena of chronic starvation are often complicated by the effects of the concomitant disease. Dietary restriction rarely occurs in healthy persons of normal weight except for purely experimental purposes. Occasionally, however, prolonged deprivation of food is enforced by untoward circumstances such as intervene during war. The effects of siege conditions with food scarcity have been described in connection with many campaigns, and recently for the siege of Kut, lasting 148 days, by Major General Sir Patrick Hehir.[1] It is estimated that toward the end of this period the daily rations yielded not more than from 1,100 to 1,800 calories for one man each day, an allowance obviously far below even the basal resting requirement. The average loss of body weight was from 10 to 15 per cent. The muscles decreased in size, and about 80 per cent. of the usual adipose tissue disappeared. Under these conditions, the metabolism was evidently lowered, as is indicated by the decidedly slower pulse rate and the lowering of body temperature, both of which have been noted in experimental underfeeding. Serious intestinal conditions resembling dysentery were widespread, but Hehir is inclined to put them to a large extent into a category somewhat different from the diarrheas of bacterial origin. He believes that degenerative changes in the digestive organs ensue in prolonged starvation, leading to failure to assimilate food properly. It is this feature, perhaps, which explains the often described inability to return at once to a normal diet after chronic undernourishment. The great caution necessary may be due to the temporary incapacity of the alimentary organs, which restorative changes can only slowly repair. What applies in such conditions may perhaps deserve emphasis in the dietotherapy following clinical forms of severe undernourishment.

1. Hehir, Patrick: Effects of Chronic Starvation During the Siege of Kut, Brit. M. J. 1:865 (June 3) 1922.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Hospital News.—Bids have been opened for the U. S. Public Health Service hospital to be erected at Tuskegee, Ala., for which an appropriation of $2,500,000 has been made. This hospital will have 270 beds for nervous and mental cases, and 230 beds for tuberculosis cases.

CALIFORNIA

Chiropractor Fined.—It is reported that C. A. Anderson, Turlock, chiropractor, was convicted of practicing medicine without a license and fined $250.

License Revoked.—It is reported that the license of Dr. Amos J. Landis of Chico was revoked by the state board of medical examiners, following the arrest of Dr. Landis on a charge of procuring an abortion.

Campaign for Funds Includes Medical School.—The campaign for $10,000,000 for the University of Southern California, now in progress, includes plans for a large medical school and teaching hospital, to cost approximately $3,500,000.

Clinic for Children Dedicated.—The Anita M. Baldwin Clinic for Children, Los Angeles, was dedicated August 13. The clinic is a complete hospital for children under 13 years of age, and was made possible by the gifts of Mrs. Baldwin and F. L. Clark.

Pasadena Preventorium to Be Erected.—Work will start soon on the Pasadena Preventorium, which will cost about $35,000. The preventorium, which will be incorporated under the state laws, will be conducted under the same management as the Pasadena Dispensary.

Chiropractors Serve Jail Sentences.—The following item appeared in the Banning (Calif.) *Record*, June 8, 1922: "Doctors A. C. Foy of Anaheim and Philip Dudley of Orange, chiropractors, recently convicted upon technical charges of violation of the Medical Practice Act, are now serving 100 days in the county jail at Santa Ana. There are five other chiropractic practitioners in jail at the present time, three at Stockton, one at Red Bluff, and one at Visalia."

COLORADO

Personal.—Dr. Otis F. Adams of Trinidad has succeeded Dr. John R. Espey as medical examiner for the U. S. Veterans' Bureau in that district.——Dr. Charles W. Thompson has purchased the Woodcroft Hospital, Pueblo, from Dr. Hubert Work.——Dr. Emory J. Brady, superintendent of the Myron Stratton Home, Colorado Springs, has resigned to become associated with Dr. Charles W. Thompson at the

Woodcroft Hospital, Pueblo.——Dr. Giovanni Perilli, Denver, left September 1, for Italy, where he may resume residence permanently, it is announced.——Dr. Melville Black, Denver, has recently returned from Europe.——Dr. Jack W. Brown, Las Animas, is convalescing from an operation for hernia at St. Joseph's Hospital, Denver.

DISTRICT OF COLUMBIA

Howard University Endowment Drive.—A hard drive is now being made by Howard University to raise $250,000 for the medical school in order to meet the conditional offer of the general education board of the same sum.

GEORGIA

Personal.—Dr. Victor H. Bassett, director of the municipal hygienic laboratory, Savannah, has terminated his contract with the city, after fourteen years in that position.——Dr. Frederick Morris has been appointed a member of the board of health of Atlanta.

IDAHO

Idaho State Medical Association.—At the thirtieth annual meeting of the association held in Wallace, recently, under the presidency of Dr. Max T. Smith, the following officers were elected for the ensuing year: president, Dr. John R. Gray, St. Anthony; vice president, Dr. Fred A. Pittenger, Boise, and secretary-treasurer, Dr. Ernest E. Laubaugh, Boise. The next meeting will be held at Idaho Falls.

ILLINOIS

Hospital News.—Plans have been drawn for a $150,000 addition to the Highland Park Hospital near the Exmoor Country Club, work on which will start in the fall.

Chinese Medical Society Conference.—The first annual conference of the Chinese Medical Society will be held at Northwestern University, Evanston, September 11-14. American visitors are welcome. Several Chicago physicians will address the conference.

Personal.—Dr. Lawrence A. Ryan was appointed city physician of East St. Louis, August 7.——Dr. Ulysses G. Darling has resigned as medical superintendent of the Lake Geneva Sanatorium, Lake Geneva, Wis., to take up practice in nervous and mental diseases in Chicago.——Dr. Lowell S. Goin, director of the roentgen-ray laboratory, Peoria, has returned from Germany where he attended a course in deep roentgen-ray therapy at the University of Frankfurt.——Dr. Joseph T. Woodward, Lincoln, has been appointed full-time medical examiner in the U. S. Veterans' Bureau, Chicago.

Chicago

Personal.—Dr. Irving Browning, physician for the C. M. & St. P. railroad, who mysteriously disappeared, August 8, was returned to his home in a dazed condition, August 20, by a taxicab driver, who also disappeared after ringing the doorbell at the Browning residence. Railroad officials indicated their belief that Dr. Browning, who had been engaged in treating nonunion workers since the shopmen's strike, had been kidnaped and that his release was due to the active police investigation of his disappearance.——Dr. Julian H. Lewis has been appointed assistant professor of pathology at the University of Chicago.

INDIANA

Physician's License Revoked.—It is reported that the license of Dr. Frederick J. Freshley of Evansville, now serving sentence in federal prison for violation of the Harrison Narcotic Law, has been revoked.

State Medical Association.—The Indiana State Medical Association will meet in Muncie, September 27-28. Convention headquarters will be at the Roberts Hotel. Prominent among speakers on the program are Dr. Charles H. Frazier, Philadelphia, and Drs. Charles M. Mix and William A. Evans of Chicago.

Hospital News.—The Protestant Deaconess Hospital of Indianapolis, which has been operated by a receiver since March 31, will be continued on its present basis until such time as a favorable offer for the hospital, for the purpose of continuing it as a hospital, is made.——Clark Memorial Hospital, Jeffersonville, is fitting up an adjoining building for use as a nurses' home.——Work on the annex to Epworth Hospital, South Bend, to cost $276,000 will start, October 1.

IOWA

Personal.—Dr. George E. Vincent, president of the Rockefeller Foundation, and Dr. Richard M. Pearce, director of the division on medical education, visited Creston recently to confer with Dr. Frank E. Sampson concerning the latter's greater community plan.——Dr. Milton D. Jewell of Decorah was seriously injured recently when his car overturned while he was answering a call in the country.

University News.—Dr. William G. Vandesteeg, resident physician in the department of gynecology and obstetrics, Iowa State University, has accepted a position as mining surgeon in Biwaki, Minn.——Dr. Arthur Steindler, professor of orthopedic surgery at Iowa University, has sailed for Europe, where he will spend three months at his old home in Vienna, Austria.——Dr. Gideon J. Ferreira, hospital chemist at Iowa State University, has gone into private practice at Aurora, Minn.——Dr. Harry W. Dahl, lecturer in clinical microscopy, department of internal medicine, Iowa State University, has accepted a position in the Hospital of the Rockefeller Institute for Medical Research, New York.

KANSAS

Hospital News.—The new St. Rose Hospital at Great Bend was dedicated, August 17. The hospital, which has a capacity of seventy-five beds, is owned and controlled by the Dominican sisters.

Personal.—Dr. Clarence H. Kinnaman of Junction City will become state epidemiologist and director of rural sanitation of the state department of health, September 1, succeeding Dr. Andrew J. Warren, who will go to the state board of health of Oregon.

MASSACHUSETTS

Personal.—Col. George E. Bushnell, U. S. Army, retired, has been selected by the Surgeon-General as lecturer on military medicine at Harvard University Medical School.

Physician's License Revoked.—It is reported that the state board of registration has revoked the license of Dr. Joseph A. Levek of Lawrence. Dr. Levek was charged with having performed an illegal operation.

Fund for Health Units.—It has been announced that the interest from the George White fund, which was left to the city of Boston for public welfare purposes, will be devoted to extending and developing health units.

MICHIGAN

Personal.—Dr. William K. West of Trimountain and Painesdale has been appointed consulting surgeon for institutional work in the upper peninsula. He was elected president of the Upper Peninsula Medical Society at the annual convention recently held at Houghton.

MINNESOTA

Assistant to Health Officer Appointed.—Dr. Arthur E. Nichols, St. Paul, has been appointed assistant to the chief health officer of the city, to succeed Dr. John S. Abbott, whose resignation was announced, August 10.

Physician's License Revoked.—It is announced by the state board of medical examiners that the license of Dr. Thomas Arneson, Climax, has been revoked, because he has been sentenced to serve thirty years in the penitentiary on a charge of rape.

Double Shift in Medical College Suggested.—At a recent meeting of the board of regents of the University of Minnesorta, it was pointed out that only about eight of 250 premedical students would be permitted to enter the medical school this fall. To overcome the difficulty, it was suggested that the medical school adopt a double shift in order to handle additional students. The board ordered that a survey be made of conditions relative to admissions to the medical school and to any needed reorganization of the medical curriculum to provide for the double shift.

MONTANA

Personal.—Dr. Thomas B. Marquis, formerly of Whitehall, has been appointed government physician for the Cheyenne Indian Reservation, with offices at Lame Deer.

Maternal and Infant Clinics Established.—In order to reduce the maternal and infant death rate, which, it is reported, is the highest among the states, the state public

health association is cooperating with county commissioners and county boards of health in establishing maternal and infant clinics in various communities.

Public Health News.—The expense of the city and county health office of Great Falls under a full-time health officer for 1921 was $2,000 less than the expenses of the preceding year under the part-time method. It was expected that the full-time plan would be more expensive, and therefore $22,000 was appropriated because the cost of the work for the previous year had been $17,000. The cost was $15,000, which is $7,000 less than the appropriation and $2,000 less than the cost of less efficient service. This system will be continued for another year, it was resolved at the recent meeting of the board of county commissioners. The county and city share equally in the annual expense, the government paying a part of the salary of Dr. George A. Fuson, the full-time city and county health officer, who has been reappointed for another year.

NEW HAMPSHIRE

Hospital News.—The new city hospital at Charles was dedicated, July 26. The hospital, which is up-to-date in design and equipment, has twenty-four beds.

NEW JERSEY

Must Vaccinate Children.—The state board of education has dismissed the appeal of George Ware, James Adams, Jr., and Luke Bates from the action of the Berlin Board of Education in ordering their children to be vaccinated before entering school. The state board justifies the action of the Berlin school authorities in excluding the children because they were not vaccinated. It is averred by the state board that the law gives authority to local boards of education to exclude from any school a teacher or pupil who has not been successfully vaccinated, unless a certificate is furnished that one not so vaccinated is an unfit subject for that operation.

NEW MEXICO

Personal.—Dr. George P. Paul, of the International Health Board, has been appointed chief of the division of county health work on the staff of the New Mexico Bureau of Public Health.

NEW YORK

New York City

Reconstruction Hospital Plans Annex.—So great has been the growth of the Reconstruction Hospital that plans have been made to build an eleven-story addition. Patients from more than thirty states and from almost every trade are being made fit to return to work. Since January 1, 903 patients suffering from industrial injuries have been cared for, almost as many as were cared for during the whole year of 1921. The success of the Reconstruction Hospital has been such that government officials are advocating the establishment of similar institutions in other large industrial centers.

National Standard Health Exhibition.—The first National Standardized Health Exhibition will be held in the Twenty-Third Regiment Armory, Brooklyn, the week of October 7. The National Health Council, the Kings County Medical Society Health Committee, the Brooklyn Chamber of Commerce Health Committee, the New York City Health Department and the Safety Institute of America are cooperating in the management of the exhibition, which will mark the beginning of an attack on the century old belief that the medical profession wishes to keep from the public the knowledge of how to prevent and cure ills.

Milbank Millions to Fight Tuberculosis.—The technical board of the Milbank memorial fund met at Paul Smith, N. Y., August 21, to consider measures preliminary to actual use of this fund, which totals approximately $10,000,000, and is the gift of the late Mrs. Elizabeth Milbank Anderson. Mr. John A. Kingsbury, secretary of the fund, stated that no new hospitals would be built, but that the fund will be used to aid work already established, especially in counties in New York State, where deserving work is handicapped through lack of money. Among the members of the technical board are Dr. Livingston Farrand, Dr. Hermann M. Biggs, Dr. Donald B. Armstrong and Dr. Otto R. Eichel.

Wood Alcohol as a Cause of Death and Blindness.—Figures published by the National Committee for the Prevention of Blindness show that, during the first half of 1922, wood alcohol caused 130 deaths and twenty-two cases of blindness. These figures, however, do not by any means cover the total loss of life or sight through the drinking of bootlegger's whisky, since this cause of death is frequently concealed by relatives and friends of the victim. More than one half of the fatal cases of wood alcohol poisoning brought to the attention of the committee during the first six months of 1922 occurred in New York, New Jersey and Pennsylvania. Five deaths were reported in Texas and four each in Connecticut, Massachusetts, Ohio and Missouri. Only three or four deaths per year from wood alcohol poisoning were reported in New York State prior to 1919, while more than eighty deaths from this cause have been reported within the last three years.

Personal.—Dr. H. F. Pierce, who has been in the department of pathology, University of Oxford, for three and a half years, engaged in research for the British Medical Research Council, has been appointed associate in physiology at the College of Physicians and Surgeons, Columbia University.——Dr. David Lazarus and Drs. Henry O. Reik and Andrew J. N. Reik, Baltimore, sailed for Europe, August 17. Dr. Abraham A. Brill, Dr. Louis Hauswirth and Dr. Oswald S. Lowsley sailed for Europe, August 19.——Dr. Samuel Kahn returned from Europe on the *Majestic*, August 22.——Dr. Herbert E. Stein sailed, August 15, on the *Mauretania*, to visit England, Germany, France, Austria and Holland.——Dr. Clarence O. Cheney has been appointed assistant superintendent of the Utica State Hospital, and will assume charge of the Marcy Division within a few weeks.——Dr. William T. M. Liccione, Mount Vernon, has tendered his resignation as a member of the board of health.

NORTH CAROLINA

Hospital News.—Contracts have been let for the Shelby Hospital, which will cost about $52,000 and have thirty-four beds.

OHIO

Personal.—Dr. J. C. Shafer, Norwood, has been appointed medical inspector of the Norwood schools, to succeed Dr. Edgar Snyder.

Health Commissioners' Conference.—The third annual conference of health commissioners of Ohio will be held at Columbus, September 5-8. Attendance at the conference is compulsory. Dr. George E. Vincent of the International Health Board, Dr. W. H. Park, professor of hygiene, Bellevue Hospital Medical College, and Dr. W. S. Rankin, state health officer of North Carolina, will be among the speakers at the session.

Court Decision Regarding Personal Attendance on Patients.—In a prosecution for violation of the Harrison Narcotic Law, the evidence showed that the defendant, a physician, had dispensed morphin at his office. In reversing the judgment of conviction and granting a new trial, the U. S. Circuit Court of Appeals, eighth circuit, said: "The power of the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, to make all needful rules and regulations for carrying the provisions of the Harrison Narcotic Law into effect, did not confer the power to say that a physician could not personally attend a patient at his office. The enforcement of the act did not require any such rule, and it is contrary to the language of the act itself, which is plain and unambiguous and says nothing about where the patient shall be when personally attended. . . . If Congress had intended to exclude personal attendance at office, it would have said so. . . . The fact of omission is strong evidence that it did not intend to say so.

PENNSYLVANIA

Personal.—Drs. Harry A. Spangler and Edward R. Plank have been chosen by the Carlisle school board as medical inspectors.

Philadelphia

Tuberculosis Survey.—Dr. Murray P. Horwood, instructor in bacteriology and public health, Massachusetts Institute of Technology, is conducting a tuberculosis survey for the Philadelphia Health Council and Tuberculosis Committee.

Drug Pedler Arrests Fewer in Police Drive.—Result of determined efforts by the police to break up the traffic in narcotic drugs was shown, August 23, when not one arrest was made in the city, and reports from all police stations indicated that the traffic is at a standstill. In every district

infested by the drug pedlers, there were plain clothes policemen closely watching for offenders.

Fines in Food Law Cases.—Fines aggregating $750 were imposed on twenty-five persons brought before Magistrate Beaten on charges of violating the pure food laws. The charges were brought by Robert M. Simmers, general agent of the state department. In addition, four persons were held for court.

SOUTH DAKOTA

Personal.—Dr. Clara E. Hayes of Illinois has been appointed head of the division of child hygiene of the state of South Dakota.

TEXAS

Physician's License Revoked.—A recent communication from the state board of medical examiners of Texas states that the board has recently revoked the license of Dr. Charles M. McMillan, formerly of Waco, who, Nov. 19, 1920, was indicted for unlawfully selling morphin and, November 24, was found guilty and sentenced to two years in the penitentiary. The limited authority of the Texas State Board of Medical Examiners makes it necessary that this revocation be legalized by court action.

VIRGINIA

Reappointments on State Board of Health.—The governor has reappointed on the state board of health, Dr. William F. Drewry, Petersburg, and Dr. William M. Smith, Alexandria.

Physician Sentenced.—It is reported that Dr. Neilson H. Turner, Richmond, was sentenced to serve six months and to pay a fine of $300 for contributing to the moral delinquency of a 17-year-old girl. Dr. Turner entered an appeal.

WASHINGTON

Hospital News.—The Sumner Hospital was vacated, August 15, it is reported, and the patients were transferred to the new Puyallup Hospital, recently opened. Mrs. Cora B. Stone, who was manager at the Sumner Hospital, will hold the same position at the Puyallup Hospital.

CANADA

Medical Association News.—The British Columbia Medical Association held its annual meeting in Kelowna, B. C., recently. Osborne Morris was elected president for the coming year. The next meeting will be held in Kamloops, October 4.

University News.—Eighteen candidates received the degree of doctor of medicine at the convocation exercises, Western University, London, Ont. J. H. Lewis, London, won the J. B. Campbell memorial scholarship in medicine. Sixteen of the graduating class passed the licensing examination of the Ontario College of Physicians and Surgeons, and one member passed the Dominion Medical Council examination.

GENERAL

Registration Certificate Lost.—It is reported that Dr. Heman Augustus Tyler, Bridgeport, Conn., left his certificate of registration on a table at the Hotel Bancroft, Worcester, Mass., and has since been unable to find it. The number of the license was 11,846.

Outpatient Services Abroad to Be Investigated.—Dr. Evarts A. Graham, St. Louis, and Dr. Daniel L. Edsall, Boston, will sail for England, September 23, to investigate the outpatient services of the British hospitals and medical schools for the Rockefeller Foundation.

Cadaver Alcohol Stolen.—It is reported that bootleggers obtained about 2,000 gallons of alcohol from medical college vats, shortly after they closed down for the summer. Most of the alcohol was redistilled in Minnesota, and distributed by booze runners in Iowa, Minnesota, Nebraska, Kansas and the Dakotas.

Medical Play to Be Filmed.—It is announce that the Famous Players-Lasky Corporation will produce a film version of André Pascal's medical play "The Caducée" (The Caduceus), which has been so much discussed in London and Paris, the physicians of England complaining that it traduced their profession.

Association of Anesthetists to Be Organized.—The Southern Association of Anesthetists is being organized and will hold its first meeting in conjunction with the Southern Medical Association at Chattanooga, Tenn., in November. Those interested are requested to communicate with Dr. William Hamilton Long, 1911 Duker Avenue, Louisville, Ky., organization secretary.

Proposed Law to Reward Discoveries in Medicine.—A reward of $1,000,000 is to be offered by the United States government for a successful cure of tuberculosis, cancer, paralysis, epilepsy or dementia praecox, should the bill introduced by Representative Sproul of Illinois be enacted by a law. The provisions of the measure call for the payment of the reward in ten annual installments to be made by a board consisting of the surgeon generals of the Army, Navy and U. S. Public Health Service, who would be called upon to investigate claims for any such discovery. The Sproul bill stipulates that no payment will be made until authorized by this board.

Deplorable Conditions in Russia.—American physicians who have just returned to Moscow after a sanitary inspection trip to districts where no relief had been extended, report that the gauze furnished by the American Relief Administration was the first seen in four years at the city hospital of Saransk. The sanitary conditions in that city were so deplorable that it was necessary to demand a general cleaning campaign before extending relief of any kind. Since the famine has been checked, a strenuous campaign throughout Russia is now being waged against filth and disease, by the American Relief Administration. Among other things, 10,000,000 people are being vaccinated against smallpox, typhoid, paratyphoid and cholera.

Consultation by Radio.—The United Fruit Company has established a radio medical service whereby their ships at sea without physicians may obtain advice by radio concerning the treatment of their sick. The company maintains hospitals and radio stations in Panama, Costa Rica, Colombia, Guatemala and Honduras, and all of its passenger steamships carry physicians. In addition, radio stations are maintained at New Orleans and Burwood, La., Fort Morgan, Ala., and Swan Island in the Caribbean Sea. While the service was established primarily for ships without physicians, it is at the disposal of vessels whose medical officers desire to consult other physicians. The messages are to take precedence over all but S. O. S. calls.

Use of Fish in Malaria Control.—It is announced by the Rockefeller Foundation that in the southern states fish are being used extensively to control the breeding of the malaria mosquito. In practically all the towns in which there have been demonstrations of malaria control by antimosquito measures, they have been an important auxiliary to drainage and oiling, and in many instances the chief or even sole reliance. In a group of five counties in Alabama, practically every farmer has convenient access to a minnow hatchery, from which he is able to stock breeding places with fish, as occasion arises. The city of Richmond, Va., has stocked all its fountains, reservoirs and lakes with top minnows, and has established hatcheries to furnish the fish free of charge to any communities in the state that want them.

Hospital Conferences.—The first annual meeting of the Protestant Hospital Association will be held at West Baden, Ind., September 12, under the presidency of Pliny O. Clark, superintendent of the Presbyterian Hospital, Denver.——All hospitals which participated in National Hospital Day, May 12, or are interested in the movement, are invited to attend a conference at the Hotel Sherman, Chicago, September 10. Methods of making hospital day more beneficial to each hospital will be discussed. Dr. Lewis A. Sexton, superintendent of the Hartford Hospital, Hartford, Conn., is chairman of the National Hospital Day Committee.——The annual meeting of the American Hospital Association will be held at West Baden, Ind., September 12-16, and the American Conference on Hospital Service will hold its session at West Baden, September 15.

Life Tables for States and Cities.—The department of commerce announces that abridged life tables based on the 1920 census will soon be issued. These tables cover 74 per cent. of the total population of the United States, or twenty-four states, including fourteen large cities. They show for this area as a whole that the expectation of life at birth for white males is 55.23 years, and for white females 57.41 years. Kansans, according to the table, are the longest lived people in the United States. Their expectation of life at birth is 59.73 years for white males, and 60.89 years for white females. Wisconsin ranks next, with 58.77 years for white males, and 60.70 years for white females. Washington, D. C., outranks all other of the fourteen cities, with 53.63 years for white males and 59.83 years for white females as the expec-

tation of life. Pittsburgh is at the foot of the list with 47.16 and 50.42 years, respectively. While the various mortality conditions show that the chances of living are much more favorable among white persons than among negroes, the improvement among negroes between 1910 and 1920 was slightly greater than among white people.

Colored Physicians Hold National Meeting.—About 700 delegates attended the annual convention of the Colored National Medical Association held at Washington, D. C., this week. They came from every state, from Canada and from the West Indies. The work of the convention included discussions and clinics by the medical and surgical sections; a joint public meeting at the Smithsonian Institution, under the direction of Dr. Roscoe C. Brown, of the U. S. Public Health Service, and chairman of the general health committee of the association; an address on public health by Dr. Aldrich R. Burton; a discussion on venereal diseases and remedies and a recommendation for the requirement of health certificates before marriage, and the usual program. The following officers were elected: president, J. Edward Perry, Kansas City, Mo.; president-elect, John O. Plummer, Raleigh, N. C.; vice presidents, H. R. Smith, Chicago, L. Marion Lawrence, Philadelphia, C. E. LeBranch, New Orleans; general secretary, W. G. Alexander, Orange, N. J.; assistant secretary, G. H. Francis, Norfolk, Va. The convention next year will be held at St. Louis, from August 22 to 24.

LATIN AMERICA

Cuban Branch of the International Surgical Association.—A branch of the International Surgical Association has been organized in Cuba. The president is Dr. José A. Presno y Bastiony, editor of the *Revista de Medicina y Cirugia* of Havana.

Brazilian Medical Society.—Officers of the Medical Society of the Hospitals of Bahia were appointed as follows: president, Dr. J. Adeodatos; vice president, Dr. Martagao Gesteira; secretary general, Dr. Aristides Novis; secretary, Dr. Aff. de Carvalho; subsecretary, Dr. Galdino Ribeiro; treasurer, Dr. Canna Brazil.

Memorial to Oswaldo Cruz.—A movement is on foot in Brazil to erect an imposing memorial to Oswaldo Cruz or organize an Oswaldo Cruz foundation. On the recent anniversary of his birthday, his tomb and the busts in the Instituto at Manguinhos and in the offices of the national public health service were decorated.

Election of Officers.—The newly elected board of the Sociedad de Obstetricia y Ginecologia of Buenos Aires recently elected for the next two year term, Dr. J. C. Llames Massini, president; Dr. A. J. Bengolea, vice president; Dr. M. L. Pérez, secretary general; Dr. J. C. Ahumada, recording secretary, and Dr. A. Villar, treasurer.

Public Health in Venezuela.—According to the last report of the director of public health of Venezuela, during the year 1921, the public health department turned into the treasury, 420,596.67 bolivars (about $42,000), compared with 376,850.23 bolivars in 1920. This was collected for disinfection and laboratory service. During the year, smallpox prevailed in several places. Several cases of anthrax were discovered in animals. An antityphoid campaign has begun, typhoid vaccine, which is offered free of charge, being employed.

Sixth Latin American Medical Congress.—A total of eighteen subjects will be discussed at the Sixth Latin American Congress, to be held at Havana: metabolism of cancers; antidiphtheria immunity and vaccination; *Leptospira icteroides* and yellow fever; inheritance and eugenics; tests in liver disease; pernicious anemia; eradication of yellow fever and smallpox from Latin America; standard classification of digestive disturbances of infants; treatment of puerperal infections; surgical indications in chronic ulcer of the stomach; convenience of a Latin American pharmacopeia; history of medicine in America, and related subjects.

Personal.—The *Brazil-Medico* relates that Dr. M. de Medeiros has been appointed assistant professor of general pathology at the University of Rio de Janeiro. He has been prosector for ten years in both the faculty of medicine and the veterinary college.——Prof. Abrami of Paris has been lecturing at Rio de Janeiro on "Anaphylactic Phenomena" and "The New Orientation of Medicine." He has been a collaborator of Widal in his research on the hemoclasis test of liver functioning, and on desensitization.——Prof. J. L. Faure, also of Paris, spoke on "Uterine Cancer" at a special meeting of the medical faculty of Rio de Janeiro in honor of the two French visitors.——The *Brazil-Medico* mentions further that Prof. Carlos de Mello of the Lisbon faculty of medicine is visiting Brazil on an official mission to study the organization of the surgical clinics and especially the ear, nose and throat clinics. He spoke on "Plastic Operations on the Nose" at a recent meeting of the Sociedade de Medicina e Cirurgia.——The name of Afranio Peixoto has been given to the new dispensary for neurosyphilis which was recently inaugurated in the grounds of the Hospital Nacional de Alienados at Rio. The dispensary is in charge of Dr G. de Moura Costa. Prof. Juliano Moreira is director general of the care of nervous and mental diseases in the province. Prof. Afranio Peixoto is on the editorial staff of the *Brazil-Medico* and is director of the medicolegal institute.——Prof. Moraes Frias of the medical faculty of Oporto, Portugal, addressed the Academia de Medicina at Rio on "Gastric Surgery," and was invited to perform some operations in Professor Magalhães' service.

FOREIGN

Prize to Mourgue.—The Dagnan prize offered by the Académie des sciences morales et politiques at Paris has been awarded to Dr. M. R. Mourgue, physician in chief of the asylum at Auxerre. It is the second time that he has won this prize.

Eye Quacks.—The *Medicina Ibera* publishes an appeal from Dr. Manuel Márquez of Madrid asking for data in regard to the work of charlatans claiming to treat eye disease. He is to deliver an address on quackery, especially from the oculist's standpoint, at the next Spanish ophthalmologic congress, and he appeals for ideas and experiences to aid him in this task. No address is given, but the address of the Madrid Facultad de Medicina is Calle de Atocha 104, Madrid, where Dr. Márquez has the chair of ophthalmology.

Better Control of "Patent Medicines" in Japan.—Owing to various conditions following the revision of the Japanese pharmacopeia, the department of home affairs has decided to control the "patent medicine" business more thoroughly. Exaggerated advertising matter will be suppressed, and thirty additional inspectors will be appointed to visit "patent medicine" factories to see that the drugs used possess the character and quality specified in the pharmacopeia, or as the samples presented in conformity with regulations.

More Than 2,500,000 Die in Russian Province.—Reports to the health section of the League of Nations show that before the situation was relieved by American help, of the 3,125,277 inhabitants of the Tartar republic, 2,500,000 died from starvation from January to March, 1922. There were 392,390 cases of infectious disease. In the Kharlov district, people were dying at the rate of 40,000 each month, or a mortality of 600 in every 1,000 population. Between March 1 and March 20, in the Kharlov district alone, 125,000 persons died of starvation.

Personal.—The medical faculty of the University of Bordeaux has founded a chair of therapeutic hydrology and climatology, and Professor Sellier is to be the first incumbent. He has been chief of the physiology laboratory for ten years and lectured on hydrology, and is an officer of the "Tourisme" Society.——Dr. T. Madsen of Copenhagen has been elected associate member of the Belgian Société des sciences médicales et naturelles at Brussels. He has also been decorated with the Italian Order of the Crown.——The French government has appointed among those who are to represent France at the festivities at Rio de Janeiro in honor of the centennial of the independence of Brazil, Dr. P. Janet, Dr. Borel, Dr. Dumas, professor at the Sorbonne, and Dr. Chiray of the Paris medical faculty.——At the ceremonies attendant on the retirement of Professor Kraepelin from the chair of psychiatry at Munich, he spoke on the duty of being healthy as the foremost duty of the young physician as he is to be the leader of the people in times of need.——Dr. R. H. Jaffe has recently been admitted as privatdozent for general and experimental pathology at the University of Vienna. He has just arrived in this country and expects to visit the principal hospitals of the United States before he enters on his duties.——Prof. H. Mygind of Copenhagen has been elected to honorary membership in the Scottish Otolaryngologic Society.

Suggestions of the Official Swiss Goiter Commission.—With the director of the national public health service presiding, the Swiss goiter commission held its important meeting recently at Bern to hear the reports of the committee that has been collecting data and studying ways and means for prophylaxis of goiter. After long and thorough discussion

on all the reports and suggestions, it was voted to propose to the authorities of the different cantons the introduction of prophylactic measures against endemic goiter in either of two ways suggested: (1) By general prophylactic treatment with iodin by the use of kitchen salt in which a certain proportion of iodin is incorporated. The amount to be used is tentatively suggested as from 0.25 to 0.5 gm. to 100 kg. of cooking salt. This amount, it was stated, would exert a preventive action on goiter, while it could not be injurious. Besides this iodized salt, the public should also have ordinary salt available without iodin. This iodized salt has already been in use in the Wallis and Appenzell cantons for some time. (2) School prophylaxis. This consists in giving once a week to the schoolchildren a tablet containing a certain amount of iodin. This method has already been introduced in a number of places. The commission adopted a further resolution in regard to calling the attention of the canton authorities to the dire effects which are liable to follow the unrestricted sale of iodin preparations to the lay public. Iodin is a drug which in any amount always requires medical supervision when it is being taken. The present unrestricted sale of iodin preparations, which is being pushed with extensive advertising, can lead to serious injury. The commission therefore appealed to the authorities to have iodin preparations—except a few in general use, such as the tincture of iodin—listed with the drugs which can be dispensed in the pharmacies only on a physician's prescription. The same appeal was made further to the commission in charge of the revision of the pharmacopeia, which work is soon to be started. The goiter commission decided further to systematize the data collected on the prevalence of goiter in Switzerland, so that the outcome of the various prophylactic measures can be estimated as the years pass, and steps were taken to insure the starting of work in this line. The *Schweizerische medizinische Wochenschrift* gives the foregoing details of the conference, but mentions no names except that of Dr. Carrière, chief of the national public health service.

Deaths in Other Countries

Dr. **James Francis Agbew,** principal medical officer of the department of repatriation, Australia, while on a visit to Scotland.——Dr. **P. Cesetti** of Rome.——Dr. **F. Hofmeister,** professor of medical chemistry and pharmacology at Prague, Strasbourg and Würzburg, noted for his discoveries in physiologic chemistry, especially the crystallization of albumin, aged 72.——Dr. **P. Esquerdo,** a prominent internist of Barcelona, Spain. The death is also reported from Barcelona of Dr. **P. Umbert,** a dermatologist and syphilologist.——Dr. **F. E. G. Persson,** physician in chief of the Esbønderup Hospital in Denmark.——The *Semana Médica* mentions the death of Dr. **Ricardo Piérola** of Buenos Aires, from food poisoning, and the death of Dr. **M. F. Saubidet,** who practiced at Mercedes, aged 56.

Government Services

Proposes Increase in Officer Personnel

Convinced that Congress has made a serious error when it ordered a radical reduction in the officer personnel of the Army, Representative Charles F. Curry of California has announced his intention to introduce a bill in Congress to stop the elimination of some 2,000 or more army officers, many of whom are in the Medical Corps.

McCoy to Attend International Conference

Dr. George W. McCoy, director of the hygiene laboratory of the U. S. Public Health Service, will represent the United States at an international conference at Geneva on medical problems. The conference will be held September 25, 26 and 27, it was announced by Surgeon General Cumming of the U. S. Public Health Service. Principal among the problems to be considered by the international conference will be the proposed standardization of antitoxins and serums. Owing to the great advance made by preventive medicine, the international trade in antitoxins and serums has heavily increased, with the result that both in imports and exports the leading nations have a great multiplicity and some confusion in such supplies. Standardization is said to be needed and will be the principal object of the international conference.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Aug. 13, 1922.

Public Health

Sir George Newman, chief medical officer to the ministry of health, has presented an encouraging report on public health in 1921 in England and Wales. The birth rate was 22.4 per thousand, a decline of 3.1 on that for 1920. The death rate was 12.1 as against 12.4 in the previous year, and the lowest on record. Infant mortality declined to 83 per thousand births, and for the quinquennial 1917-1921 was 88. Longevity has been increased. The principal factor in this is reduction in the mortality of early life. Of 100,000 male children reaching the age of 5 years, 2,132 would die within the 5 years following, according to the mortality of 1891-1900, and only 1,678 according to that of 1910-1912. At 15, the corresponding figures are 1,864 and 1,392; and at 25, 2,947 and 2,116. According to the English life tables, the average lifetime of a population which died at the rates experienced between 1838 and 1854 would be nearly forty years for males and just under forty-two for females. According to the mortality of 1910-1912, the average lifetime for males was increased to 51.5 years and for females to 53.3. The result is that, on the average, a baby born now will live twelve years longer than his grandfather.

Sir George Newman does not consider his results entirely satisfactory. Though the mortality at young ages has greatly decreased, mortality at adult ages is discreditable to us. We have failed to keep pace with some nations. The discreditable mortality affects particularly the centers of our most important industries, such as Lancashire and the West Riding of Yorkshire. There is no very close relation between the excessive mortality and the ordinary statistical evidence of poverty, nor is there reason to attribute the whole of the excess to industrial hazards or climatologic conditions beyond human control. The length of life of adult men is much less than it should be.

The Physical Education of Girls

A committee formed under the chairmanship of the pediatrician Dr. G. F. Still, and consisting of representatives of the College of Physicians and Surgeons, the British Medical Association, Medical Women's Federation, British Association for Physical Training, Ling Association, National Union of Women Teachers and other associations of teachers, was formed, in October, 1921, to consider the effects of physical education on girls. A questionnaire was sent to persons having a special knowledge of the subject, including physicans, school principals and women students, medical and otherwise. A report has now been made on the basis of the replies. Among the school principals there was a consensus that games and physical exercises have a beneficial effect on disposition and character. On the question whether gymnastics with apparatus is suitable for girls, 66 per cent. of the replies were favorable, but about half of these stated that careful supervision was necessary. Among the women students, 80 per cent. were in favor of the use of apparatus, but some thought that gymnastics conduced to muscular strength without gracefulness. As to games, tennis and net ball received general approval. Hockey, though approved by the majority of teachers and students, was regarded by some as suitable only for the older and stronger girls. Cricket was generally approved, but some doubted its utility. Lacrosse was approved by almost all who offered information about it. Football was generally disapproved as entail-

ing too much strain. Swimming was generally approved, but moderation was enjoined. Racing in rowing was condemned, and ill effects were recorded. Bicycling in moderation was approved.

The physicians considered that physical education, including games and sports, was as generally beneficial to girls as to boys, but discrimination was necessary with regard to individuals. Swimming, rowing, riding and bicycling were all considered good. Of the games, only football was considered unsuitable. Gymnastics under expert direction were valuable in promoting harmonious development of the muscles. To what degree should exercises be restricted during menstruation? Abstention has been generally recommended, but in recent years evidence has been brought forward that this is harmful rather than beneficial. The physicians could not pronounce any final judgment, but considered that a more extensive trial of voluntary exercise (swimming excepted) was justified. As to the suggestion that the increased muscular and bone development from exercise might make parturition more difficult, no proof of this was found.

The Cultivation of Medicinal Plants

At the annual conference of the British Pharmaceutical Society, Prof. H. G. Greenish, dean of the School of Pharmacy of Great Britain, delivered an address in which he urged the necessity of establishing an experiment station for medicinal plant research. He pleaded for investigations with regard to the influence of selection, breeding and manuring, in increasing the amount of active principles in plants. A particularly important subject for investigation was the part played by alkaloids in the metabolism of the plant. At present, the opinion was gaining ground that alkaloids formed a means by which plants disposed of the excess of nitrogen resulting from the breaking down of complex nitrogenous substances. Until more light was thrown on this, it was difficult to see how rational experiments could be conducted to produce larger quantities of such alkaloids. While the synthetic production of quinin might be a triumph for organic chemistry, the more economical production might lie in the utilization of the countless millions of natural laboratories that every plant possessed in its cells. A station on the lines proposed was established in Wisconsin. The British dominions must possess an untold wealth of plants, some of which might be superior for medicinal, dietetic or technical purposes to those now generally used.

Fracture of the Skull in a Nasal Operation

An inquest was held at the Royal Naval Hospital, Chatham, on a lieutenant who was operated on by a surgeon-commander of the navy for an obstruction of the nose. In removing some spongy bone, the hammer and chisel were used. The patient suddenly stopped breathing, but artificial respiration proved successful and the operation was completed. The patient was put to bed, but died eleven hours later. The necropsy revealed a fracture of the base of the skull above the nose, which was attributed to the jarring of the hammering or to the chisel penetrating the skull, which was abnormally thin. The jury returned a verdict of death by misadventure, without attributing any blame.

A Village Settlement for Consumptives

The first village settlement for consumptives has been opened at Papworth in Cambridgeshire. The colony was visited by the minister of health, Sir Alfred Mond, who opened thirty-one new cottages, two hostels and a nurses' home. The Right Hon. Sir Clifford Allbutt, president of the colony, said that all consumptives were admitted, no matter in what state, and practically all could have their families with them for their comfort and solace, as more cottages were provided. The patients gained self-respect, as they gradually began to earn their living. The workshops brought in considerable revenue. Sir Alfred Mond said that the colony was unique and the most complete which existed in the world, combining in one sanatorium, hospital, village settlement and industry. He was glad that there was a market for the products and that these workshops were sound, self-sustaining enterprises, without the need of charitable assistance, in either the purchase or the manufacture of goods. He hoped that more of these settlements would be established. Tuberculosis was declining: the death rate was 2,000 per million in 1877, 1,000 in 1907 and 840 in 1920. These results were encouraging, and there seemed no reason why we should not be able to stamp out tuberculosis in the way that smallpox and typhoid had been stamped out.

The Legitimation of Illegitimate Children

The home secretary has brought in a bill to legitimatize illegitimate children on the subsequent marriage of their parents, whether the marriage takes place before or after the passing of the bill. But the bill does not enable a legitimatized person to succeed to or transmit titles or dignities. If either of the parents of the illegitimate person has been married to another person, any children who by virtue of the second marriage become legitimatized shall, as between themselves and the children of the previous marriage, be deemed younger than the children of the previous marriage, in determining succession to property.

BELGIUM

(From Our Regular Correspondent)

Aug. 4, 1922.

International League Against Tuberculosis

The third congress of the Union internationale contre la tuberculose was held at Brussels in July. At the first session, Dr. L. Bernard discussed the prophylaxis of tuberculosis in children under school age, and subsequently the conference passed the following resolution:

> The third international conference against tuberculosis, recording the experimental and clinical facts which show that contagion is alone responsible for tuberculous infection in children and that heredity plays no part, requests the cooperation of public and private agencies in a united effort to bring about a prophylaxis against tuberculosis, at the different ages of childhood, by developing the various means given us to establish such a prophylaxis, including the placing in a preventorium of children already infected with the disease; the placing of the healthy children of tuberculous families by methods of the type of the Oeuvre Grancher for the older children and in centers for younger children where the tuberculous may be sifted out (*centres de triage*); education of the public through the dispensaries and visiting nurses; medical inspection of schools.

Next came a report by Dr. Sand and Miss C. Olmsted, the latter being the director of the division of visiting nurses of the League of the Red Cross Societies. At the close of the report the following resolution was passed:

> The third conference of the Union internationale contre la tuberculose proclaims the paramount importance of the collaboration of the visiting nurse in the campaign against tuberculosis. It recommends that measures be adopted at once by the public authorities with a view to assuring to visiting nurses a proper financial status (a minimum salary, financial assistance during the prosecution of the course of study, sick benefits, allowance of disability claims, and pensions). Visiting nurses should be carefully trained for their triple duties, as nurses, educators and diagnosticians. The visiting nurses should be considered as an élite formation, both as regards their selection and the exercise of their profession.

The third question dealt with sanatorium treatment and the character of work that the tuberculous may be permitted to perform. The work done by the tuberculous should be supervised, and carefully graduated to the needs of the patient. No work at all should be permitted during the active and febrile periods of the disease. The patient ought to be allowed to become interested in some form of light work that will not overtax his powers of resistance. It was

the general opinion of the congress that in every section of the large cities there should be an industrial plant in which there would be equipment for every kind of trade, in order that the tuberculous might work there together under the direction of the chief of the dispensary in which they were registered.

Penitentiary Reforms

M. Heger Gilbert presented recently a report to the Academy of Medicine on the organization of the new anthropometric services in the prisons. He also spoke of the work performed by the prisoners and emphasized the important part that work played in bringing about a moral regeneration of the inmates. A large proportion of those confined have not learned a trade. It is especially this class of delinquents for whom the regenerative power of work should be tried. As far as possible, such delinquents should use the time they spend in prison in learning some trade that would enable them to earn an honorable living when they get out. If they do not do so, they will soon find themselves in the same condition that caused them to commit the first crime or misdemeanor, for which reason they almost inevitably become recidivists. By the application of anthropologic tests it is possible to determine which persons are capable of learning a trade and which ones would be unable to do so, for the reason that age, lack of physical capacity or moral insufficiency would make it impossible for them to acquire the knowledge that the application of a trade necessitates.

Radium Therapy and Cancer of the Tongue

Bayet and Sluys have reported most excellent results from radium therapy in the treatment of cancer of the tongue. They declare that the introduction of radium therapy marks a wonderful progress in the treatment of this affection and one that was scarcely hoped for, since the poor results with other methods did not allow us to anticipate it. As for the question of recurrences, only the future can decide that. In any event, the situation can scarcely be worse with radium therapy than it has been with surgery. But radium therapy is just in its beginnings and is a method that is being perfected day by day, whereas surgery has already given us about all we can expect from this mode of intervention.

The Bad Housing Conditions

Basing his statements on the annual statistical report of Belgium, Monsieur Velghe published recently an interesting study on housing conditions. Comparing the periods from 1880-1890, 1890-1900 and 1900-1910, and taking into account the proportional increase in the number of households and the number of houses erected in the different periods, he concludes that there is a deficit of 50,000 houses. Allowing 30,000 for the number of homes destroyed in the devastated regions, we arrive at a total of 80,000 houses, to build which would require the expenditure of two billion francs. When this deficit shall have been made up, the task of the public authorities will not be ended, for then an earnest campaign against overcrowded tenements must be begun, which of necessity has been suspended under the present conditions.

Rejection of Proposed Reciprocity with England in the Matter of Medical Licensure

The Academy of Medicine was invited by the government to give its opinion on the question of establishing reciprocity with England and allowing English physicians to practice in Belgium. A commission was appointed to inquire into the problem. The chairman, Monsieur Hertoghe, visited London in order to inform himself in regard to the organization of medical studies in England.

From his report it appears that the organization of medical education in England is of a character to give full guaranty as regards professional studies, examinations and the mode of bestowing diplomas. In spite of this fact, it is evident that between the various classes of physicians practicing medicine in England there are such widespread differences that the situation there is quite different from what it is in Belgium, where no one is permitted to practice medicine unless he is the holder of the academic degree of doctor of medicine, surgery and obstetrics conferred by a university recognized by the state. In England, the General Medical Council grants the right of practicing the art of healing to practitioners of widely different training. Holders of the degree of doctor of medicine (M.D.) constitute a small minority (about 20 per cent.) of the practitioners, and they therefore enjoy such great prestige among the clientele that it is not likely that any of them would think it advisable to leave England. The project that was submitted to the academy would therefore have no interest for this class. It was accordingly thought best that the academy should not recommend the establishment of medical reciprocity between England and Belgium.

Society for the Protection of Children

The Association internationale de la protection de l'enfance has just held its first regular session at Brussels. Twelve governments were officially represented, and delegations were sent by the various national committees. During the twelve months previous to the holding of this session, an exceedingly active propaganda has been undertaken throughout the entire world with a view to bringing about effective cooperation as regards the efforts that are being put forth in various countries for the protection of children.

STANDARDIZATION OF STATISTICS

With a view to bringing about greater uniformity in the gathering of statistics, various resolutions were drawn up. It was deemed especially desirable that statistics on infant mortality should follow a uniform plan, in order that comparative deductions could be made. It was also proposed that a list of all societies in all countries of the globe having directly or even somewhat remotely to do with the protection of children should be prepared and filed with the general secretary. An endeavor should also be made to ascertain the exact scope of each society or federation, in order that information would be on hand to show just what society should be addressed in a given case.

PARIS

(From Our Regular Correspondent)

Aug. 11, 1922.

International Cooperation in Intellectual Fields

The commission selected for the study of questions pertaining to international cooperation in intellectual fields held a meeting recently at Geneva. In previous letters (THE JOURNAL, June 10, 1922, p. 1828, and July 29, 1922, p. 492) I have indicated the origin and the make-up of the commission. Professor Bergson (France) and Professor G. A. Murray (England) were chosen president and vice president, respectively. One question taken up was the feasibility of an inquiry into the state of intellectual life in various countries. Another question dealt with the means of bringing immediate aid to nations in which the intellectual life is threatened with imminent disaster. The commission requested the council of the League of Nations to institute an inquiry on the situation in various countries as regards intellectual work and the economic conditions under which it is being performed. The commission declared its readiness to supply all necessary information on the subject, and to serve as intermediary in the application of any measures in which it could be of assistance. In this connection, the commission empowered Monsieur Gonzague de Reynold, of the Univer-

sity of Bern, and Madame Curie, of the University of Paris, to inquire into the situation in Austria and Poland and to prepare a report on the means that should be employed to bring about an improvement.

The question of organizing on an international basis bibliographic records and a system of exchange of publications was also discussed. The commission appointed a subcommittee composed of Mlle. Bonnevie (Norway), Madame Curie, Monsieur Destrée (Belgium) and Monsieur de Reynold, under the chairmanship of Monsieur Bergson. This subcommittee will also study the need of a legally constituted international depository of scientific works, and the establishment of one or more international libraries as the outgrowth of such a depository.

American Welfare Work in the Region of Soissons

During its trip through the devasted regions the Good Will Delegation attended at Soissons the ceremonies connected with the laying of the cornerstone of the new dispensary of the Goutte de lait. Among those present were Mrs. Dike, Miss Anne Morgan, Mgr. Binet (bishop of Soissons), Senator Hermant and André Tardieu, of the chamber of deputies. The various speakers referred to the welfare work of the American committee, in the region of Soissons, since 1917. This committee has given aid to 127 villages, furnishing provisions and helping in the reconstruction work. Dr. Bonnenfant, general secretary of the Goutte de lait, told the delegates that, up to June 1, 1922, this child welfare society had succored 12,000 children and made 72,000 calls. In the department of Aisne, infant mortality, which amounts to 100 per thousand for France as a whole, is only 97 per thousand, while the city of Soissons has the much lower record of 34 per thousand.

School Nurses

The general council of the department of the Seine will consider a project for the organization, instruction, recruitment and remuneration of school nurses or assistants in school hygiene.

The Crisis in Pharmaceutic Specialties

For some time, the manufacturers of pharmaceutic specialties have been complaining bitterly of the crisis that is affecting their industry. Some of them have suffered serious losses, while all have had to face a more or less marked falling off in sales. What are the causes leading up to this state of affairs? In the first place, during recent years, many foreign countries (the United States, Argentina, Canada, Spain, etc.) have imposed certain restrictions on the sale of these products, consisting of more or less severe supervision, obligation of published analyses, custom duties, etc. Also in France, the medical profession is beginning to react against the ever increasing flood of specialties. Being constantly importuned by the promoters of rival products, physicians are growing weary and are seeking a means of escape.

To the extent that the foreign market becomes closed to their products, the manufacturers of specialties concentrate their efforts at publicity on France and Belgium. Recently a specialty house had an advertisement in a medical journal in which a physician who possessed "a persuasive style" was sought as a collaborator. It would not seem that the firm succeeded in finding the man desired; for, soon afterward, such commonplaces as "Buccal 'vaccination' is given per mouth" (*se fait par la bouche*) could be noted in the literature sent out by this house.

At the present time, it is in the field of vaccinotherapy and organotherapy that propaganda is especially wild and fierce, assuming the proportions of a veritable plague. Every manufacturer proclaims that his vaccines are atoxic and the most efficacious, but, as a rule, he is very guarded about giving any precise statements as to the mode of preparation. In organotherapy also, the manufacturers imagine the most profound polyglandular associations.

The League of Nations and the Opium Question

The commission of the League of Nations, which is charged with deciding what measures shall be taken in the application of the opium convention, has specially requested the committee on hygiene of the league to secure an approximate estimate of the average amount of certain dangerous narcotics that can be considered necessary, in different countries, for the needs of medicine and for other legitimate purposes. The committee on hygiene decided that the most useful preliminary measures to be taken would be the institution of an inquiry in countries in which the population is relatively sparse, where there is no manufacture or exportation of narcotics, and where there is good reason to believe that there is no manifest abuse. By proceeding thus it was thought that a sort of standard of comparison could be secured for the countries in which the population presents the same character. Australia and New Zealand were suggested as best likely to fulfil these conditions, since it would be possible for the minister of public hygiene and the minister of commerce to obtain approximate estimates without necessitating much detailed research. It would be particularly instructive to compare the estimates established in Australia and New Zealand with the analogous results secured, if possible, in Denmark, in the other Scandinavian countries, in Switzerland and in Belgium.

Below will be found the results of the inquiries instituted by the ministers of hygiene of Sweden and Denmark, relative to the consumption of opium, morphin, cocain and diacetylmorphin in their respective countries:

CONSUMPTION OF NARCOTICS

	Sweden (1920)*		Denmark (1917)†	
	Total	Per Inhabitant	Total	Per Inhabitant
Opium	1,600 kg.	0.27 gm.	467.40 kg.	0.16 gm.
Morphin	120 kg.	0.02 gm.	98 kg.	0.033 gm.
Cocain	150 kg.	0.0254 gm.	48 kg.	0.016 gm.
Diacetylmorphin (heroin).	2 kg.			

* Population (1920), 5,903,762 inhabitants; mortality, 13.29 per thousand.

† Population (1917), 2,960,000 inhabitants; mortality, 13.3 per thousand.

Creation of a Seaside Hospital for Children

The municipal council of Paris has decided to establish a seaside hospital at San Salvador, department of Var, on the ground acquired by the city of Paris. This hospital will be provided with 220 beds and will admit rachitic children and those suffering from tuberculosis other than pulmonary. It will be administered by the Assistance publique de Paris and will be subject to the same control as its other establishments. For furnishings and equipment the society has been granted an appropriation of a million francs.

Personal

Dr. Jeannin has been appointed professor of clinical obstetrics (Faculté de médecine, Paris) in place of Professor Bar, who has retired.

An International Congress of Universities

After discussing the proper means of promoting interuniversity relations, the commission on intellectual cooperations has decided that it would be advantageous, as soon as circumstances permit, to call an international congress of all the universities of the world (those under private as well as those under state control), in order to consult with those interested on the possibilities of intellectual cooperation. A subcommittee has been appointed to prepare the way for such a congress.

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BUDAPEST

(From Our Regular Correspondent)

Aug. 7, 1922.

Professor Kolle on Syphilis and Arsphenamin

The Budapest Scientific University, the name of which has been changed recently from Budapest Royal Hungarian Scientific University to Pazmany Scientific University, invited Professor Kolle, successor of Professor Ehrlich, the inventor of arsphenamin, to deliver the Markusovsky address. Markusovsky was a member of the revolutionary ministry in 1848 (Hungarian revolution for liberty), as chief military surgeon of the home defense army. In recognition of his services in public sanitation, as well as in politics, the medical faculty of the university presents a lecture entitled the Markusovsky address once in every five years, on the anniversary of his death.

Professor Kolle's subject was "Arsphenamin and Neo-Arsphenamin." The lecture was attended by a large number of physicians. Professor Kolle opened his address by mentioning the war friendship of Germany with Hungary, a friendship now based on common scientific work. He spoke of the researches which are carried on in his institute aiming at the further improvement of arsphenamin. His lecture was accompanied by stereopticon and cinematograph pictures illustrating the extensive research work for newer remedies. They have inoculated thousands of rabbits, and have found that, besides human syphilis, there is a special syphilis of rabbits and guinea-pigs, which spreads with incredible rapidity among them.

Professor Kolle, in closing, recalled Professor Ehrlich's statement, now proved by the latest researches, that we have to administer in the initial stage of syphilis the largest possible doses in order to fight the organisms producing the disease.

The New Law Relating to Alcohol Consumption Among Juveniles

The government has promulgated the new law relating to the sale of liquors to juveniles. According to this order, it is forbidden to serve liquors containing more than 0.5 per cent. of alcohol to juveniles under 16 years of age. Wine and beer can be served only to boys over 16, and the other alcoholic beverages can be served only to those 18 years or over. In case of doubt, the lads are obliged to certify their age. At concerts and balls and in dancing schools, only wine and beer may be sold to juveniles. Inn keepers and restaurant owners are obliged to instruct their staff as to this order, and must put a board containing the prohibition order in a striking place on their premises. This notice must list also the punishments fixed for violators. Execution of the order is the duty of the police.

Summer Vacation of Vienna Children in the Hungarian Lowlands

A few days ago, a special train brought to Csongrád the first group of children on vacation from Vienna. As the Vienna authorities had made arrangements for 400 children, provisions as to board were inadequate when 200 additional children arrived. Luckily, Csongrád is a wealthy community; within three hours all the children were under shelter, and there was even a keen competition for getting a "Viennese." The children on arrival were emaciated, shabby and pale-faced for the most part, and when they saw the tempting white bread and roast chicken prepared for 400, but enough for a thousand, at the railway station, on a vast table, some shed tears, and on being questioned, answered that they would be happy if they could have brought their brothers and sisters and parents. The medical examination showed that all the children were healthy. They were weighed on arrival and will be weighed again after a fortnight. The children were accompanied by five woman teachers, and one physician.

A Whole Country Threatened with Blindness

A Hungarian physician, recently returned from Armenia, where he worked with the American Relief Commission, says that the famine and terror stricken country, Armenia, is threatened by a new peril, trachoma, which is spreading so that all the population of Armenia is endangered. There are villages in which almost all the inhabitants are suffering from trachoma. Medical men are scarce, and medicines are to be had only in towns, which in some cases are hundreds of miles away. The position is desperate. The people have been undernourished for several years, and therefore their resistance is lowered. According to Dr. Uhls, if more assistance does not come, in a few years' time all the population of Armenia will become blind. "Instead of the Greek tragedy writers, Life is writing the darkened tragedies here," Dr. Uhls concluded in his report.

Proposed Notification of Abortion

Several municipal boards of sanitation in Hungary intend to issue orders which will make it obligatory to notify cases of miscarriage. At a meeting of physicians convened to discuss the matter in a large provincial town, the majority held that compulsory notification of abortion would have only one advantage; namely, that prosecution in case of criminal abortion would thereby be facilitated, although malpractice could not be suppressed in this manner. Women would be driven into the hands of unauthorized midwives, and the number of deaths would thus be increased. Consideration of the difficulty of insuring secrecy in the working of a system of notification, and the serious injustice which might arise therefrom, resulted in rejection of the plan.

VIENNA

(From Our Regular Correspondent)

July 29, 1922.

Report of First Aid Corps for 1921

The Vienna Rettungsgesellschaft, a private society which provides first aid in all public and private accidents, has just published its report for 1921. When this corps was founded, forty years ago, it was intended to serve as a rebuke to the criminal negligence of those then in authority, who were responsible for the loss of several hundreds of lives in a fire that destroyed the city theater. Supported by voluntary contributions, it has organized first aid so that, in many cities on the continent, as well as in distant countries, its working rules have been copied. Regular courses, given to the police, to the foremen of factories, to adolescents and also to numerous women, have been conducted during these forty years and have served to spread the knowledge of first aid throughout the population, to the benefit of many a sufferer. In 1921, no less than 15,018 calls, comprising all sorts of accidents, were answered, and 10,635 persons were transported to hospitals—an average of about eighty calls a day. Of these, no less than 20 per cent. were attempts at self-destruction, 45 per cent. were accidents due to traffic or work in the streets, and nearly 30 per cent. comprised injuries sustained indoors, in workshops, factories and railway stations. The outfit of the rescue parties is considered to be the best obtainable; yet this necessary and useful charitable institution is in desperate need of funds. It had to appeal to the government and the municipality for substantial grants, as otherwise it would have to discontinue its work.

Influx of American Physicians

A number of practitioners from the United States are at present working in the clinics and outpatient departments of the Vienna hospitals. It may safely be stated that they find

here at least the same favorable teaching conditions that were in vogue before 1914. The present organization seems even better than previously. As far as possible, the physicians are accommodated in the clinics in groups which belong together, and the classes are conducted in a way which suits the needs of the newcomers admirably. There are classes for beginning specialists and for advanced work, as well as for routine work and surgery. The exchange rate of the dollar is a great advantage, living expenses being much lower here than at home. The teaching is about as expensive as it was before the war, but even at that, less than in the United States.

The Fresh Milk Supply for Vienna

The average monthly supply of fresh milk amounted to more than 27,000,000 liters (quarts) in 1913 for Vienna alone, but in October, 1918, this quantity had decreased by 89 per cent. to only 4,500,000, or 150,000 daily. When, however, owing to the peace treaty, the chief pasture grounds were cast off from Austria, no more than 90,000 liters each day arrived in Vienna in 1919, although the average minimal requirement of milk for infants' hospitals and the severely sick amounted to more than 750,000 liters a day. In the summer months of 1919 and 1920, conditions went from bad to worse, because a large proportion of the fresh milk turned sour before it reached the city, as there were no refrigerators or ice-cooled vans available for transport. Out of 113,256 liters coming to Vienna daily in August, 1921, 40 per cent. became sour and thus unfit for infant feeding. Before the war the per capita quantity each day was 0.41 liter (a little less than a pint); in November, 1918, it went down to 10 per cent. of this quantity; in July, 1920, it dropped further to half of that quantity (0.02 liter); in July, 1921, it was 0.04 liter again, and it remained approximately the same until the end of the year, so that only one tenth of the peace ratio was available. In the Alpine districts, the conditions were also far from satisfactory, for there too the present quantity of milk available is no more than from one fifth to one third of that deemed as a minimum in 1913. These figures explain the most distressing spread of rickets and underdevelopment of infants during the last few years, and it is not likely that a radical change will take place within reasonable time. The rural population in Austria has turned from the milk industry and pays more attention to slaughtering animals and to the crops, because these pay much better; on the other side, the former milk districts no longer belong to this country, and the import of the milk to Vienna is, at the present exchange rate, quite impossible.

Attempts to Improve the Situation of the Ministry of Health

The Union of the Officers of the Boards of Health has presented an appeal to the national assembly and the government, in which it explains that the present situation of the so-called ministry of health requires a radical change, in order to make its existence a real factor of public welfare. As it is now, the Volksgesundheits-amt (board of public health) is only regarded as a ministry of public health, but it lacks the one item which is a chief feature of a ministry, independence. The "amt," or board, is only a section of the ministry for social welfare, and is controlled not by a medical man, as it ought to be, but by a minister, who as a rule is a politician or a lawyer or at best a capable official, but not an expert in medical matters. But at present the interests of the population require that in all matters pertaining to public health no other points of view than medical should be paramount, and no other man than a medical expert is capable of judging what is best in this way of looking at things. While in 1918, when the new constitution for Austria was created, all leading men were unanimous that the importance of public health demanded a separate ministry for these affairs, gradually the political parties succeeded in pushing this ministry to the wall, and after Professor Tandler, who managed to maintain some independence for this office as long as he was at the head of this section, had tendered his resignation, the board was simply annexed by the ministry of social welfare, and now is responsible to and also handicapped in many instances by this ministry. Step by step, the efficiency of the board of health is being narrowed down systematically. All the "welfare actions" pertaining to the care for children and adolescents have been taken away from the board, and its independence is even responsible for absolutely unjustified attacks against it in the national assembly. The appeal goes on to say that the present situation is bound to produce most undesirable friction, and demands a perfect separation of the two ministries, so as to restore the original independence of the ministry of health, and unite all matters pertaining to public health, to medicine or to prophylaxis, in one separate body controlled only by a medical minister who is coordinated with the other ministers in the government.

BERLIN

(From Our Regular Correspondent)

Aug. 4, 1922.

Housing Conditions Among Berlin Workmen

As mentioned in former letters, the executive committee of the Allgemeine Ortskrankenkasse (health insurance society) of the city of Berlin, in which most of the working men are insured under the *Reichsversicherungsordnung* (Germany's health insurance law,) published, a few years ago, a report on the housing conditions of its insured, and the facts brought out awakened widespread interest. During the war, and for some time thereafter, no statistical reports of the kind were published, but now a report covering the years 1919 and 1920 has appeared. Among the interesting statements brought out by the report is the fact that the number of ill working men living in houses and apartments fronting the street has decreased, while the number of those living in the cheaper rear dwellings and apartments has increased. In 1918, 52.14 per cent. of ill employees were living in rear dwellings; in 1919 the number had increased to 53.46 per cent., and in 1920 to 55.89 per cent. More than 5 per cent. of the patients were lodged in rooms with less than 10 square meters floor space. More than one third were obliged to share their dwelling rooms with other persons. Even in rooms with only 6 square meters were found patients living with other persons. Approximately 5 per cent. of the patients lived in rooms the ceilings of which were less than 2.5 meters high, the number of such patients having increased from 929 in 1919 to 1,494 in 1920. Of these dwellings, 39.96 per cent. were in cellars or basements, while 41.83 per cent. were in attics, which is especially significant in view of the fact that before the war the use of basements and attics was, for hygienic reasons, prohibited. In 1920, 13.46 per cent. of all patients were obliged to share their lodging with other persons (as compared with 8.07 per cent. in 1918). Twenty per cent. of these patients had some pulmonary affection.

Alcohol and Heredity

A woman physician of Berlin, Dr. Agnes Bluhm, who has published some noteworthy articles in the field of industrial hygiene and the science of heredity, reported recently the results of her researches on white mice, which throw some light on the effect of the immoderate use of alcoholics on hereditary transmission. When heavy doses of 20 per cent. ethyl alcohol are injected into males, and these are then allowed to mate, about 50 per cent. of the matings prove sterile. Similar injections given to females lower the percentage of offspring even more. As the size of the litters is

also decreased, the few embryos in the uterus that survive can be better nourished, which would explain the fact that some of the single births and unusually strong specimens. It is also stated that alcohol exerts a marked effect on the proportion of males and females in the progeny, for if alcohol injections are given the male progenitors, the proportion of males to females among the offspring is considerably increased. The results of former researches on guinea-pigs, chickens and rats are in harmony with these observations on mice. In the case of the former, more congenital defects of the limbs, the eyes and the intelligence were noted than were observed in the mice. If a single animal is given injections of alcohol, a distinctly recognizable damage to the germ cells may be noted down through the fourth generation, even though the injected animal and its progeny are mated with healthy animals.

Personal

F. Holmeister, the Würzburg professor of physiologic chemistry, died, August 1, at the age of 72. In 1879 he became instructor in physiologic chemistry in Prague, and in 1881 went over to pharmacology. He later worked under Schmiedeberg in Strasbourg. In 1884 he became head professor in Prague, and in 1896 he was called to Strasbourg to succeed Hoppe-Seyler. When, after the war, the German professors were obliged to sever their connection with the University of Strasbourg, he moved to Würzburg, where he was given an honorary professorship. He is the author of many important works in the field of physiologic chemistry, which treat especially such subjects as amido-acids, lactosuria, collagen, peptone, formation of urea, and demonstration of crystallized egg albumin.

MEXICO

(From Our Regular Correspondent)

Aug. 13, 1922.

Women Complete Bacteriologic Courses

Fourteen young women who took a year's course in laboratory diagnosis, after receiving fellowships from the public health department, have completed their courses and have been granted their diplomas. These young women will be employed in several branches of the public health department. In view of the success of this course, which was in charge of Dr. Perrin, a similar one will be offered next year.

New Public Health Journal

The department of public health has begun the publication and free distribution of a public health fortnightly entitled *Mensajero de Salud*. The editors are Drs. Pruneda and Ochoa, two veterans in public health propaganda.

Proceedings of the Sixth Medical Congress

The second and last volume of the transactions of the Sixth Medical Congress, held at Toluca in 1920, is just out. The book has been published through a subsidy of the government secured by the action of President Obregon. The publication has been in charge of Dr. Everardo Landa, reporter of the congress, to whom requests for the book should be addressed, 4/a. Calle del Perú, No. 130.

Personal

In a journal published by medical students, Dr. Santiago Ramirez presents an article in which he claims priority in the treatment of leprosy with tartar emetic injections.——Dr. Servando Osornio is one of the members of the special embassy sent by Mexico to Brazil, apropos of the centennial celebration. Dr. Osornio has just graduated from the Army Medical School, and his thesis dealt with personal experiences in treatment of syphilis with the Linser mixed method.

Marriages

KARL WILLIAM WAHLBERG, Moline, Ill., to Miss Blanche Mildred Carpenter of Rock Island, Ill., July 15.

CHARLES A. WALLBILLICH, New Orleans, to Miss Emma Laura Sullivan of Tullahoma, Tenn., June 8.

LELAND STERLING MCKITTRICK, Boston, to Miss Addie Moore Davidson of Norfolk, Va., August 5.

JOHN SWOPE DAVIS CHAMBERS to Miss Helen Jones, both of Chicago, August 10, at Davenport, Ia.

JOHN RUSSELL CARTY, New York City, to Miss Mary Pierce of Andover, Mass., July 27.

WILLIAM KIDWELL TURNER to DR. FREDERICA ANN PHILLIPS, both of Seattle, July 1.

JOHN D. YOUNG to Miss Helen Jansen, both of Covington, La., June 17.

Deaths

Stephen Smith, New York, died at the home of his daughter, in Montour Falls, N. Y., August 26, aged 99 years and 6 months. Dr. Smith began the study of medicine at Geneva Medical College, Geneva, N. Y., in 1848; in 1849 and 1850, he was a resident student in the hospital of the Sisters of Charity, Buffalo, and in 1850 entered the College of Physicians and Surgeons, New York, where he was graduated in 1851. Following graduation, he spent two years as intern at Bellevue Hospital. He was a teacher at Bellevue Hospital from 1854 to 1891; professor of surgery at the Bellevue Hospital Medical School from 1861 to 1865, and professor of anatomy from 1865 to 1874; he was also consulting surgeon at Bellevue, St. Vincent's and Columbus hospitals. Dr. Smith was joint editor of the *New York Journal of Medicine* from 1853 to 1857, and editor from 1857 to 1860; editor of the *American Medical Times*, 1860 to 1863. He was the author of "Handbook of Surgical Operations," published during the Civil War; "Principles and Practice of Operative Surgery," 1887; "Civil Obligations of the Surgeon," 1908; "Who Is Insane?" 1916, and "The City That Was," 1911. In 1864, Dr. Smith became a member of the Council of Hygiene of New York City, the investigations and report of which led to the creation of the Metropolitan Board of Health. He was for six years New York State commissioner of lunacy, serving from 1882 to 1888. He introduced new and more humane methods in caring for the insane, and his plans for this work led to "The State Care Act," which became a law in 1890. Dr. Smith was appointed a member of the state board of charities in 1893 and continued a member until 1918, when he resigned at the age of 95. It is said that of the last 100 meetings of the board of charities Dr. Smith was present at ninety-six. In 1870, he called together a conference of the health officers of the principal cities to form an association for the improvement of public health, and thus began the American Public Health Association, of which he was the first president. In 1878 Dr. Smith prepared the bill creating the National Board of Health, which name was changed to the Marine Hospital Service in 1881. He was United States commissioner to the Ninth International Sanitary Conference at Paris, 1894, and assisted in drafting a sanitary code to avert the danger of epidemics attendant on the annual pilgrimages to Mekka. At its semicentennial, the American Public Health Association presented Dr. Smith with a bronze medal bearing his own portrait. Had he lived less than six months longer, Dr. Smith would have been 100 years old.

Philip Adolphus, Chicago; University of Maryland School of Medicine, Baltimore, 1858; member of the Illinois State Medical Society; emeritus professor of clinical gynecology at Rush Medical College, Chicago; Civil War veteran; for thirty-three years superintendent of the Central Free Dispensary; consulting physician to the Presbyterian Hospital; member of the Chicago Gynecological Society and of the Society of Medical History; died, August 26, aged 94, from bronchial pneumonia.

James Spottiswood Taylor ✱ Philadelphia; commander, M. C., U. S. Navy; University of Virginia Department of Medicine, Charlottesville, Va., 1894; for several years in

✱ Indicates "Fellow" of the American Medical Association.

charge of the division of publications, of the bureau of medicine and surgery, U. S. Navy, and editor of the *United States Naval Medical Bulletin*, to which he contributed many articles, particularly on medical history; died, August 27, aged 52.

Walter Howard Ross, Brooklyn; Bellevue Hospital Medical College, New York, 1898; member of the Medical Society of the State of New York; on the staff of the Bethany Deaconess, and the Harbor hospitals; died, August 15, aged 51, at the Post Graduate Hospital of New York, from adenocarcinoma.

Lafayette J. Wilson, Sebastopol, Calif.; Hahnemann Medical College of the Pacific, San Francisco, 1915; member of the Medical Society of the State of California; died, August 15, aged 38, at the Hahnemann Hospital of the University of California, San Francisco, from cerebral hemorrhage.

Preston B. Loftin, Beaufort, N. C.; University of Maryland School of Medicine, Baltimore, 1888; member of the Medical Society of the State of North Carolina; died recently, aged 60, from carcinoma of the stomach.

Frank Neeler Mandeville, Newark, N. J.; Columbia University College of Physicians and Surgeons, New York, 1909; member of the Medical Society of New Jersey; died, August 6, aged 39, from lobar pneumonia.

Rufus B. West, Fort Worth, Texas; Vanderbilt University Medical Department, Nashville, Tenn., 1882; member of the State Medical Association of Texas; died suddenly, August 9, aged 64, from heart disease.

Henry Herbert Baker, Albany, Ohio; Ohio Medical University, Columbus, 1902; member of the Ohio State Medical Association; died, August 18, aged 48, at the Mercy Hospital, Columbus, from pleurisy.

Adolphus George Meyersburg, Brooklyn; Medical Department of the University of the City of New York, 1875; member of the Medical Society of the State of New York; died, August 19, aged 74.

Harry Nelson Cross ✙ Stockton, Calif.; Cooper Medical College, San Francisco, 1889; aged 55; was found dead in a hotel, August 18, with a bullet wound in his head, presumably self-inflicted.

Maurice Hill Krebs ✙ Huntington, Ind.; Columbia University College of Physicians and Surgeons, New York, 1900; died suddenly, August 17, at Fort Wayne, aged 44, from heart disease.

Charles Albert, Rockville, Md.; University of Maryland School of Medicine, Baltimore, 1872; died, July 23, aged 69, at the Montgomery County General Hospital, Olney, from heart disease.

Thomas C. Washburn, Spencer, N. Y.; Albany Medical College, Albany, N. Y., 1889; member of the Medical Society of New York; died, July 12, aged 61, from acute cardiac dilatation.

Alan Lewis Diefenderfer, Slatington, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1908; member of the Medical Society of Pennsylvania; died, August 8, aged 40.

Pettus Gray Ellesor, Newberry, S. C.; Medical College of the State of South Carolina, Charleston, S. C., 1894; member of the South Carolina Medical Association; died, August 14, aged 53.

Bertram Hensel Gilmer, Cape Charles, Va.; University College of Medicine, Richmond, Va., 1903; member of the Iowa State Medical Society; died, July 21, aged 48, from paresis.

Amos Mead Ritch, Brooklyn; New York Homeopathic Medical College, New York City, 1886; on the staff of Cumberland Street Hospital; died, August 13, from carcinoma of the throat.

Robert James Greer, Parnassus, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1894; member of the Medical Society of the State of Pennsylvania; died, July 31, aged 53.

Michael Frederick Hannelly, Mount Ayr, Iowa; College of Physicians and Surgeons, Keokuk, Iowa., 1894; member of the Iowa State Medical Society; died, August 14, aged 48.

Calvin Oliver Prince ✙ Plymouth, Mass.; American Medical Missionary College, Chicago, 1899; on the staff of the Jordan Hospital; died, July 28, aged 49, from myocarditis.

William Stephen McDonald ✙ Fort Scott, Kan.; Jefferson Medical College, Philadelphia, 1888; on the staff of the Mercy Hospital; died, July 23, aged 68, from angina pectoris.

John J. Eklund ✙ Duluth, Minn.; Minnesota Hospital College, Minneapolis, 1885; formerly county coroner; aged 61; was shot and killed, August 12, by an insane patient.

Nicholas McCabe ✙ North Platte, Neb.; University of Buffalo, Department of Medicine, 1886; served for two terms as mayor of North Platte; died, August 8, aged 67.

Reese B. Kash, Frenchburg, Ky.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, Ky., 1898; died recently, aged 51.

William Francis Varcoe, New York City; Medical Department of the University of the City of New York, 1891; died, August 10, aged 66, from pernicious anemia.

George William Holley, Hinton, W. Va.; Howard University School of Medicine, Washington, D. C., 1892; died, August 8, aged 54, from chronic nephritis.

William Turell Learned ✙ Fall River, Mass.; University of Pennsylvania School of Medicine, Philadelphia, 1885; died, August 14, aged 61, from heart disease.

Florence M. Seward, Wilmington, Del.; Southern Homeopathic Medical College, Baltimore, 1905; died suddenly, August 12, aged 42, from heart disease.

John C. Salmon, Pinconning, Mich.; University of Michigan Medical School, Ann Arbor, 1878; died in July, at Bay City, aged 76, from cerebral paralysis.

Charles Machant Roberts ✙ Hot Springs National Park, Ark.; Vanderbilt University Medical Department, Nashville, Tenn., 1892; died, August 4, aged 55.

Herschel Isaac Fisher, Lebanon, Ohio; Miami Medical College, Cincinnati, 1886; member of the Ohio State Medical Association; died, August 5, aged 64.

Charles E. Whitfield, Woodstock, Ga.; College of Eclectic Medicine and Surgery, Atlanta, Ga., 1890; died recently, from chronic interstitial nephritis.

Warren D. Scott, Gary, Ind.; Hahnemann Medical College and Hospital of Chicago, 1882; aged 70; died, August 3, at the St. Mary's Mercy Hospital.

Philmer Bruce Green, Fort Payne, Ala.; Vanderbilt University Medical Department, Nashville, 1875; died, July 10, aged 70, from chronic nephritis.

Eleanor Lawney, Denver; Denver College of Medicine, Denver, 1887; member of the State Medical Society of Colorado; died, August 9, aged 71.

Willard Gerhard Benawa, Gladstone, Ore.; John A. Creighton Medical College, Omaha, 1907; died, July 9, aged 44, from pernicious anemia.

Arthur H. Sykes, Junction City, Ark.; University of Arkansas Medical Department, Little Rock, Ark., 1895; died, August 11, aged 61.

Eugene B. Clark, Bethany Beach, Del.; Georgetown University School of Medicine, 1872; died, August 3, aged 73, from heart disease.

M. S. Carpenter, Chateaugay, N. Y.; Toledo Medical College, Toledo, Ohio, 1885; died, August 9, from carcinoma of the pharynx.

Milton C. Hunter, Champion, Pa.; College of Physicians and Surgeons, Baltimore, 1882; died, August 4, aged 72, from pneumonia.

Jefferson LaFayette Wylie, Ripley, Ohio; Bellevue Hospital Medical College, New York, 1871; died, August 15, aged 77.

William Elias Chamberlin, Lincoln, Neb.; Rush Medical College, Chicago, 1865; died, August 7, aged 81, from senility.

James Farrar Stone, Philadelphia; Bellevue Hospital Medical College, New York, 1866; died, August 15, aged 82.

W. R. McLaren, Galesburg, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1878; died, August 6, aged 72.

Solomon Franklin Jowers, Equality, Ala.; Atlanta Medical College, Atlanta, Ga., 1885; died, July 15, from paresis.

Charles Daniel Dennis ✙ Columbus, Ohio; Ohio Medical University, Columbus, 1896; died, August 14, aged 52.

Stephen M. Bennett, New Goshen, Ind.; Eclectic Medical Institute, Cincinnati, 1873; died, August 10, aged 75.

Nancy Annie Fleming, Des Moines, Iowa; Iowa Medical College, Des Moines, 1883; died, July 29, aged 77.

Michael E. Hurd ✙ Mahaffey, Pa.; Jefferson Medical College, Philadelphia, 1883; died, June 12, aged 70.

Frederick A. Knights ✙ Pequot, Minn.; Chicago Medical College, 1890; died, August 18, aged 61.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

THE INDIANAPOLIS CANCER HOSPITAL

The Evolution of the Cancer Cure of Leon T. Leach

A week seldom passes that does not bring an inquiry regarding the "Indianapolis Cancer Hospital," conducted by C. C. Root and C. A. McNeill. Here is a typical one received from a physician in the state of Washington:

"I am enclosing a letter which was sent to a patient of mine. . . . We are at a loss to know how these people got hold of her name and her exact condition."

A physician in Ohio writes:

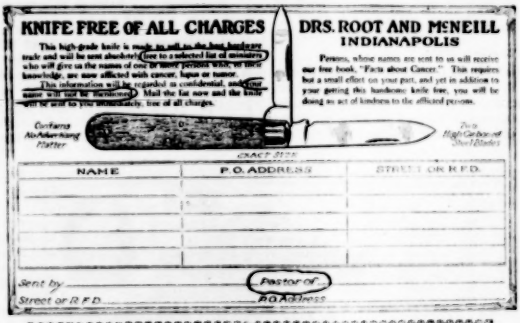
"The enclosed letter was handed me by a patient who has an epithelioma of the face. He claims he does not know where they could have obtained his address; he brought the enclosed to me for information. What can you tell me about them?"

And this from a physician in a New York city:

"I am enclosing a letter handed me by a patient that is practically self-explanatory. One of the mysteries in connection with this letter is how these people got his name."

While, from Nebraska:

"I have a friend who is struggling to take care of an only sister who has been pronounced by several good men as being incurably afflicted with carcinoma of the breast. Recently on her own initiative she has gone to a cancer hospital in Indianapolis, Ind., conducted by Drs. Root & McNeill. They are charging her a big price and giving her lots of encouragement. In fact have just told her that they do not think she has cancer at all, but tuberculosis of the breasts instead. They tell her that in about six months they ought to get her in pretty good shape. Now the brother is willing to mortgage his home or do anything else to help her out if there is any chance of relief, but he feels that things are not quite straight somewhere. Could you give me an idea of what kind of a place this 'cancer hospital' is?"



Photographic reproductions of the offers of Root and McNeill to clergymen. For the *names* of sufferers from cancer, the clergymen will receive a pocket knife; for a *"patient"* that will go to Root and McNeill, he will receive $25.00—and the victim will know nothing about it!

EVOLUTION OF LEACH'S CANCER CURE

The "Indianapolis Cancer Hospital" is the latest name for what was originally known as the "Parkview Sanatorium," and later called the "Leach Sanatorium." This business was started by Leon T. Leach mainly as a mail-order "cure" for cancer; in 1910, after Leach's business had been declared a fraud and debarred from the mails, the name was changed to "Leach Sanatorium." In 1913 the concern was incorporated with L. T. Leach as president and principal factor, his wife, secretary and treasurer, and Charles A. McNeill, vice president. In 1916 the name was again changed to its present style and McNeill became president and Charles C. Root, treasurer. Root had been in the employ of Leach for some years.

Leach, in the original conduct of his "cancer cure" did business chiefly through the United States mails, but did have a few patients go to Indianapolis for "treatment." About 90 per cent., however, of his "patients" were treated by mail. Leach got his training in cancer cure fakery as manager for his father-in-law, Quack D. M. Bye, who for years exploited the "Combination Oil Cure" for cancer and "founded a little church in Indianapolis with the money extracted from his dupes." Finally, the long arm of the United States Post Office Department reached out for Leach, analyzed his worthless cure, declared it a fraud and, in June, 1909, debarred his business from the use of the United States mails. After the issuance of the fraud order Leach changed his method of doing business and required his patients to go to Indianapolis. This permitted him to claim that he diagnosed his cases after personal examination.

The two men at present conducting the Indianapolis Cancer Hospital, Charles C. Root and Charles A. McNeill, are classmates of Leach, all three being graduated by the Medical College of Indiana, Indianapolis, in 1901. Root practiced at Fowlerton, Indiana, for some time before he settled in Indianapolis. McNeill seems to have practiced for some years in Dallas, Texas, and Sedalia, Missouri. In this connection it is worth noting that some years ago Leon T. Leach, although listed in the medical directories at Indianapolis, also exploited his "cancer cure" from Dallas, Texas. From that place he solicited physicians and asked them to refer to him cases of cancer. In so doing Leach made this offer:

"My custom is to divide my fee with the local physician under whose supervision the case may be. In addition to this, the local physician will get his ordinary fee from the patient for waiting on the case. I get $25.00 for a month's home treatment [This was before Leach was debarred from the use of the U. S. mails.—EDITOR.] or, if the patient comes to my establishment, I charge $100 for five weeks' treatment. I allow the physician referring the case one-third of the amount paid."

GETTING A MAILING LIST

Root and McNeill obtain the names of those who suffer from cancer, or who are supposed to be suffering from cancer, by a method that arouses as much contempt for certain members of the ministry as it does for the men themselves. They mail to clergymen a small booklet entitled "Helping Humanity," on the front cover of which appears an imposing looking church. The booklet contains a batch of testimonials of the usual "cancer cure" type with illustrations (before and after); all are alleged to be from ministers. The booklet declares that "the ministers whose photographs and testimonials follow know the merit of our treatment. . . ." It is worth noting in passing that at least one of the reverend gentlemen, whose picture and testimonial adorn the pages of this booklet, claims to have taken the treatment in 1903.

Accompanying the booklet is an offer that is an insult to the decent members of the ministry. The minister to whom it is made is asked to send in the names of any persons known to be suffering from "cancer, lupus, or tumor." Those who send in such names will receive a pocket knife, a pair of cuff buttons, a watch fob, a fountain pen, a clothes brush or some other trinket! A few years ago the New York *Tribune*

referred to the premium phase of this outfit after the matter had been brought to its attention by Cyrus Townsend Brady. At that time a clothes brush was the paltry mess of pottage offered to those ministers of the gospel who would furnish material for this concern's mailing list. The *Tribune*, in commenting on the subject, said in part:

"If any clergyman could be found so mean as to fill in this blank he would deserve to be unfrocked and publicly disgraced. A deacon who robbed the collection plate would be an aureoled saint compared to a minister who would lend his assistance to so contemptible a scheme for the sake of a cheap clothes brush."

It appears, too, that clergymen with itching palms and elastic consciences can obtain from Root and McNeill even a larger return. "Certificates" that are "good for $25.00" are sent to ministers; all that is necessary is for the minister to interest himself personally in sending a "patient" to Root and McNeill. He, the minister, then fills out the reverse side of the "certificate" giving the name and address of the individual that he has persuaded to go to the "Indianapolis Cancer Hospital" and stating when the victim will arrive in Indianapolis. "My name is not to be mentioned. This is strictly confidential." A nice business, truly!

THE LEACH "CURE"

Needless to say Root and McNeill give no hint as to the nature of their alleged cure for cancer. They do, however, publish a list of those whom they claim to have successfully treated. As many of the names published in 1922 by these men appeared in Leach's old testimonial literature, detailing "cures" going back as far as 1903, one is justified in assuming that Root and McNeill use the Leach method. At the time the federal authorities interfered with Leach's fraudulent business an analysis was made by the government chemists of the "cure." Here, in effect, is what was reported:

Photographic reproduction of the letterhead used by Root and McNeill.

"CANCEROL BLOOD RENOVATOR." — This preparation was labeled, in part: "A Compound of Essential Oils for the Treatment of Malignant Diseases. Predigested Oils for internal administration." The federal chemists reported that the stuff contained 10 per cent. of alcohol, a little more than 16 per cent. of total solids, almost wholly sugars, no alkaloids and no oils. It had an odor resembling sarsaparilla and senega. It was not a "compound of essential oils," neither were there any "predigested oils" present.

"CANCEROL."—This was nothing but cottonseed oil.

"SPECIAL GERM KILLER AND DISINFECTANT."—This was a disinfectant of the creosol type and was to be used by diluting one teaspoonful in three pints of hot water. Bacteriologic tests showed that the solution, when diluted as prescribed, had little, if any, germicidal value.

PILLS.—These were colored red and sugar-coated; they were found to consist essentially of baking soda, iron (ferrous) sulphate, a small amount of red pepper and glucose.

The above comprised the "treatment" for "internal" cancer; for "external" cancer the victims received the "Cancerol Blood Renovator" and the "Pills" as described above and, in addition:

"NIGHT OIL."—This, like "Cancerol," was found to be a small bottle of cottonseed oil.

"DAY OIL."—This was a half-ounce bottle of ichthyol.

"PRESCRIPTION 16."—Found to be an alcoholic preparation containing opium.

"HEALING SALVE."—This, according to the federal chemists, was vaseline in which were incorporated boracic acid and bismuth salts.

"DR. VIT-OL."—This was a caustic paste—invariably used by the "cancer cure" quacks—and contained 34 per cent. of arsenic.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PHENOBARBITAL ("LUMINAL") MEDICATION

To the Editor:—Please answer the following questions regarding the drug phenobarbital ("luminal," phenyl-ethyl barbituric acid):

1. What is the average adult dose?
2. What are the symptoms of toxicity from the drug?
3. What are the contraindications to its use?
4. To what extent, if any, is it habit forming?
5. Is there any contraindication to its use in pregnancy complicated by epilepsy?
6. Can it be used continuously in epileptics whose convulsions are entirely controlled by comparatively small doses (1 grain three times daily)?

RICHARD D. ANDERSON, M.D., Burlington, N. J.

ANSWER.—1. According to New and Nonofficial Remedies, 1922, the dosage is from 0.05 to 0.3 gm., increased if necessary to 0.8 gm. The average dose is 0.1 gm. (1½ grains). A maximum dose of 0.8 gm. should not be exceeded.

2. Symptoms of phenobarbital poisoning as reported by Phillips (THE JOURNAL, April 22, 1922, p. 1199) are severe skin rashes, gastro-intestinal symptoms, and nephritis. "It has a sedative action on respiration, lessening the frequency of breathing, although the volume of each respiration is increased. It kills by respiratory paralysis" (New and Nonofficial Remedies, 1922, p. 60). It has many toxic symptoms common to barbital; its circulatory depression is more severe. Under the use of large doses (0.3 gm. or more), drowsiness may persist on the following day, while occasionally vertigo, hebetude, headache, and nausea have been noted. More marked sequelae, such as delirium, mental impairment, circulatory derangements and ataxia, have been attributed to the continuous use of large amounts.

3. It has been stated that in cases of great debility, arteriosclerosis or marked pulmonary and cardiac disease, phenobarbital should be employed only with considerable caution; it is contraindicated in nephritis.

4. "The danger of habit formation should be equivalent to that which has been attributed to barbital (veronal)" (THE JOURNAL, May 21, 1921, p. 1420). Since the foregoing was published, however, Grinker (THE JOURNAL, this issue, p. 788), says: "Phenobarbital, when taken over many years, neither causes damage to the viscera nor results in habit formation."

5. No.

6. Yes, dependent on the judgment of the physician in the individual case.

BLOCH METHOD OF DISCOVERING HEMOPHILIA

To the Editor:—Please give the Bloch method for discovering the presence of hemophilia.

E. B. SULLIVAN, M.D., Mount Vernon, N. Y.

ANSWER.—The blood is received in a titrated solution of sodium citrate (1 c.c. of blood in 4 c.c. of sodium citrate at 1:400). The dilution and calcic inactivation nullify interference from foreign substances, which is the cause of so many errors in direct observation of blood coagulation. Equal parts (0.2 c.c.) of this citrated blood are put into a series of tubes containing increasing doses of calcium chlorid (of from 0.00005 to 0.0005 gm. diluted in 4 c.c. of water until the content is isotonic with the blood). In a few hours, these tubes present shadows of coagulation, incomplete at first in the tubes containing little calcium, then more and more com-

V. 19

plete as the necessary dose of calcium for total coagulation is reached. The tube in which coagulation has begun—the threshold of coagulation—and the one in which coagulation is complete are examined. The proportion of sodium citrate and calcium chlorid contained in these tubes constitutes the "signs of coagulability." These signs are remarkably invariable in normal blood (sign 2 at the threshold, 1 at complete coagulation). The higher the coagulability the higher the signs, and inversely. Moreover, each one of the small clots in the tubes presents with minuteness the aspect of normal retractility, hyperretractility and hyporetractility, and irretractility. With this technic, Bloch asserts that he has been able to ferret out experimental and pathologic variations when other methods were unsuccessful.

ULTRAVIOLET LIGHT

To the Editor:—What is ultraviolet light and in what respect is it comparable to sunlight for therapeutic purposes?

X, New York.

ANSWER.—The expression ultraviolet *light* is somewhat of a misnomer in that it refers to rays beyond the range of direct visibility of the ordinary solar spectrum. These rays have a shorter and shorter wave length as one proceeds farther and farther beyond the visible violet at one end of the spectrum, whereas in the direction of the infra-red region of the spectrum the rays have longer wave lengths. The spectrum of sunlight reaches only to 290 millimicrons in the utraviolet region. The shortest wave lengths known are those of the gamma rays of radium. Such studies as have been made of the physiologic effects of rays of different wave lengths and the same energy indicate that the potency, for example, the lethal effect on micro-organisms, increases with the shorter wave lengths. Light greater than 300 millimicrons being our normal environment, it is obvious that any organism ordinarily exposed to this light and easily injured by it would have perished long ago. Light less than 300 millimicrons in wave length is an unnatural environment and produces in living cells marked and often very harmful reactions. As the effect of light is probably due to the photochemical reactions produced when light energy is absorbed, it is not surprising to find that various constituents of protoplasm begin to absorb light strongly in the neighborhood of 300 millimicrons. It is the cold invisible ultraviolet rays rather than the heat waves that produce sunburn, erythema solare; and it is by virtue of their reactivity toward cells that they acquire therapeutic potency (Oliver, E. L.: Quartz Light Therapy in Skin Diseases, THE JOURNAL, Aug. 19, 1922, p. 625). The effects secured with the chemical rays of sunlight have led to the trial of other more potent sources of ultraviolet rays, such as are produced by the iron arc and other bare metallic arcs and by the mercury vacuum tubes. The latter in particular are rich in rays of short wave lengths, but these are absorbed by the glass through which the rays suitable for illumination readily pass. Since quartz does not thus filter out the ultraviolet rays, the quartz mercury arc lamps have become an effective source of the latter for therapeutic use. The essential difference between true heliotherapy (with the sun's rays) and the therapy with special sources of ultraviolet rays, such as the quartz lamp, lies in the relatively greater potency and availability of the latter. Quartz "light" can be given in larger dosage than sunlight can, and at any time. It should be recalled, further, that window glass acts as a filter for the ultraviolet rays of sunlight.

For a review of the physiologic actions of light, the reader is referred to:

Clark, Janet H.: The Physiological Action of Light, *Physiol. Rev.* 2: 277 (April) 1922.

Light as a Therapeutic Agent, editorial, THE JOURNAL, this issue, p. 827.

SIR RONALD ROSS

To the Editor:—Please advise me whether Major Ronald Ross, of malarial fame, is an Englishman or an American.

W. H. BELL, M.D., Decatur, Ill.

ANSWER.—Sir Ronald Ross of the Indian Medical Service is an Englishman. For his work, which led to effective prevention of malarial fever, he received the Nobel Prize in 1902.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 5. Sec., Dr. Harry C. DeVighne, Juneau.
DISTRICT OF COLUMBIA: Washington, Oct. 10. Sec., Dr. Edgar P. Copeland, Stoneleigh Court, Washington.
FLORIDA: Tallahassee, Oct. 10-11. Sec., Dr. W. M. Rowlett, Tampa.
GEORGIA: Atlanta, Oct. 10-12. Sec., Dr. C. T. Nolan, Marietta.
HAWAII: Honolulu, Oct. 9-12. Sec., Dr. G. C. Milnor, 401 Beretania St., Honolulu.
IDAHO: Boise, Oct. 3. Director, Mr. Paul Davis, Boise.
ILLINOIS: Chicago, Oct. 10-12. Supt. of Registration, Mr. V. C. Michels, Springfield.
KANSAS: Topeka, Oct. 10. Sec., Dr. A. S. Ross, Sabetha.
MASSACHUSETTS: Boston, Sept. 12-14. Sec., Dr. Samuel H. Calderwood, State House, Boston.
MICHIGAN: Lansing, Oct. 10-12. Sec., Dr. Beverly D. Harison, 504 Washington Arcade, Detroit.
MINNESOTA: Minneapolis, Oct. 3-5. Sec., Dr. Thomas S. McDavitt, 539 Lowry Bldg., St. Paul.
MONTANA: Helena, Oct. 3. Sec., Dr. S. A. Cooney, Power Bldg., Helena.
NEW HAMPSHIRE: Concord, Sept. 7-8. Sec., Dr. Charles Duncan, Concord.
NEW JERSEY: Trenton, Oct. 17-18. Sec., Dr. Alexander MacAlister, State House, Trenton.
NEW MEXICO: Santa Fe, Oct. 9-10. Sec., Dr. R. E. McBride, Las Cruces.
NEW YORK: Albany, Buffalo, New York and Syracuse, Sept. 25-28. Asst. Professional Examinations, Mr. Herbert J. Hamilton, State Education, Albany.
OKLAHOMA: Oklahoma City, Oct. 10-11. Sec., Dr. J. M. Byrum, Shawnee.
PORTO RICO: San Juan, Oct. 3. Sec., Dr. M. Quevedo Baez, Box 804, San Juan.
WEST VIRGINIA: Huntington, Oct. 10. State Health Commissioner, Dr. W. T. Henshaw, Charleston.

Minnesota June Examination

Dr. Thomas S. McDavitt, secretary, Minnesota State Board of Medical Examiners, reports the oral, written and practical examination held at Minneapolis, June 6-8, 1922. The examination covered 15 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 46 candidates examined, 45 passed and 1 failed. Fifteen candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Illinois		(1922)*	88.3
University of Minnesota	80.6, 80.8, 83.2, 83.8, 83.9, 84.3, 84.3, 84.3, 84.6, 84.7, 85, 85.2, 85.6, 86, 86, 86.1, 86.2, 86.2, 86.2, 86.3, 86.4, 86.7, 86.9, 87.2, 87.3, 87.8, 87.9, 88, 88.3, 88.3, 88.8, 88.9, 88.9, 89.3, 90.1, 90.1, 90.8, 90.8, 91.7	(1921) 87.3, (1922)†	79.7,
Jefferson Medical College		(1921)	81.7
University of Pennsylvania		(1920)	87.1

College	FAILED	Year Grad.	Per Cent.
Georgetown University		(1903)	69.9

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College		(1903)	North Dakota, (1921) Illinois
University of Illinois		(1920, 2)	Illinois
Drake University		(1913)	Iowa
Baltimore Medical College		(1893)	Iowa
College of Physicians and Surgeons, Baltimore		(1900)	Penna.
University of Michigan Medical School		(1920), (1921)	Michigan
St. Louis College of Physicians and Surgeons		(1905)	Illinois
Washington University		(1921)	Missouri
John A. Creighton Medical College		(1911)	S. Dakota
University of Nebraska		(1919)	Missouri
Western Reserve University		(1916)	Ohio
University of Manitoba		(1915)	N. Dakota

* This candidate has finished the medical course, and will obtain the M.D. degree after he has completed a year's internship in a hospital.
† These candidates have finished the medical course and received their M.B. degrees, and will obtain the M.D. degree after they have completed a year's internship in a hospital.

Florida June Examination

Dr. W. M. Rowlett, secretary, Florida State Board of Medical Examiners, reports the written examination held at Tampa, June 12-13, 1922. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 39 candidates examined, 25 passed and 14 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Alabama		(1913)	81.1
Howard University		(1918)	77.2
Atlanta College of Physicians and Surgeons		(1906)	78.9

Atlanta Medical College	(1916)			79.1
Emory University	(1921)	83.4, 85.6,	(1922)	75.8, 87.2
University of Georgia	(1914)	77.2,	(1921)	86.3
Indiana University			(1916)	84
Tulane University	(1913)	82.1,	(1919) 83.5, 84, (1921)	88.6
University of Maryland			(1918)	83
Harvard University			(1921)	76.3
College of Phys. and Surgs. in the City of New York			(1895)	75.5
Jefferson Medical College			(1902)	85.2
University of Pennsylvania			(1918)	81.3
Medical Coll. of the State of South Carolina	(1912)	83,	(1917)	83.2
University of Tennessee			(1916)	86.6
University of Toronto			(1916)	77.9
University of Central Spain, Madrid			(1915)*	75

FAILED

University of Arkansas			(1911)	67.3
Atlanta College of Physicians and Surgeons			(1905)	73.1
Atlanta Medical College			(1903)	13.3
Atlanta School of Medicine			(1909)	72.3
University of Georgia	(1891)	73.7,	(1911) 66.6,	71.6
Northwestern University			(1873)	74.1
College of Physicians and Surgeons, Baltimore			(1884)	60.6
Harvard University			(1894)	67.4
Dartmouth Medical School			(1893)	63.4
Long Island College Hospital			(1889)	73.4
University College of Medicine, Richmond			(1901)	64.1
University of Santo Tomas Faculty of Medicine			(1910)	68.1

* Graduation not verified.

Miscellany

ELEMENTS DETERMINING THE VALUE OF MEDICAL SERVICES: AN ENGLISH JUDGE'S VIEWS

A statement of facts and findings in a recent suit by a London physician for the recovery of the value of professional services rendered a wealthy patient appeared recently in the London letter (THE JOURNAL, July 29, p. 390). Aside from the facts and findings, however, the case is of particular interest because of the implied recognition by the presiding judge of the justice of charging persons of wealth more for professional services than is ordinarily charged patients in moderate or poor circumstances and because of his clear statement of some of the elements that may properly be considered in determining what a physician's services are worth in any particular case.

The defendant, who was sued for fees that he had refused to pay, did not dispute the plaintiff's skill and care, and the only question put in issue was whether the physician's charges were excessive. The defendant was a man of wealth, and his refusal to pay was said by the presiding judge to represent "a protest by business wealth against the theory that a rich man should pay unusual fees." After stating that he was fully satisfied that no express agreement was made between the physician and his patient as to the amount of fees, and that the physician was therefore entitled to recover only what his services were justly worth, and after commenting on the fact that the physician-plaintiff in the case "generously fulfilled the beneficent and widely exercised privilege of a doctor in charging low fees to poor patients," the presiding judge, Mr. Justice McCardie, thus analyzed the situation:

"In these circumstances, what is the plaintiff entitled to charge? There is no rule of the profession which prescribes a standard. There is nothing in the medical profession which is equivalent to the scale of fees existing among architects, solicitors, or other professional men. Medical fees may be high or low. They vary greatly. They depend on locality, the status of the patient, the professional position and popularity of the medical man, and the general circumstances of the case. The General Medical Council has established no rule on the matter, nor has it indicated any requirement whatever as to the duty of a practitioner with regard to remuneration (*Pratt v. the British Medical Association*, 35 the *Times* L. R. 14 [1919] 1 K. B. 244). If the fees are not agreed on, then the requirement of the law is that the charge shall be reasonable.

"On what does reasonableness depend? To a large extent the matter must be determined by considering the amounts which by general custom are paid in normal circumstances. In its substance the question is sociological. The status of the medical man and his relation to society as a whole is one of deep importance. If his social status is to be high, his fees must not be unduly low. No one will dispute that a great profession should receive an adequate remuneration. On the other hand, the scale of fees demanded may outrun the financial resources of the general public and lead to well-based protest. It happens that the defendant here is, in fact, rich. But it seems to be the practice to presume a man's obligation for fees (within, of course, limits which should not be exceeded) not so much by his actual monetary resources as by the social position that he adopts. His house rent can be estimated. His bank-book is rarely seen. He who employs the apparatus of wealth may be fixed with the presumption of wealth. Perhaps this method is not on the whole an unjust one. The vast amount of work, moreover, which is done by the medical profession, not only without reward but also with generous self-sacrifice, must not be overlooked. The high cost of living imposed on one who practices his profession in a fashionable district is also to be considered, and the long and costly education of a medical man is a factor of serious weight. I must apply these considerations to the case and the body of evidence laid before me."

The case, although apparently unimportant in itself so far as the medical profession generally is concerned, was deemed sufficiently important to be made the subject of an editorial in the London *Times* (July 5, 1922), which referred to the decision as being "eminently fair to the parties and of great practical value to the profession and to the public."

The details of English law differ from those in force in our several states, but conditions of medical practice and of judicial logic are more or less similar, and the circumstances stated by the presiding judge in explanation of the method by which he arrived at his decision in this case, doubtless may have a persuasive influence in similar cases in the United States.

DEAFNESS IN THE UNITED STATES

A census of the causes of deafness in the United States for the year 1920, taken by the Census Bureau, shows that there are 44,885 deaf-mutes in the country. Schedules mailed to this number by the bureau brought responses from 35,026, of whom 32,392 reported the cause of their deafness; of these, 13,513, or 41.5 per cent., reported that they were born deaf. Causes of deafness were grouped in the census according to the part of the ear chiefly affected. Of those for whom the cause of deafness was reported, 8,290, or about one fourth, reported causes which affect the middle ear. This group included 6,682, or 20.5 per cent., reported as due to diseases which produce ulceration of the ear, while 1,589, or 4.9 per cent., were stated to be due to diseases which do not cause ulceration. Nearly one fifth, 6,429, or 19.6 per cent., were reported as deaf from causes which affect the internal ear. Those comprise chiefly 5,976, or 18.3 per cent., who were stated to be deaf from causes which affect the hearing nerve, and 272, or 0.8 per cent., deaf from diseases which affect the labyrinth of the ear. Of the specific diseases reported as causing deafness, scarlet fever accounted for 3,346, or 10.3 per cent.; meningitis, together with "brain fever," was reported by 4,551, or 14 per cent.; typhoid fever accounted for deafness in 642 cases, or 2 per cent.; measles was reported by 1,083, or 3.3 per cent., and whooping cough by 636, or 2 per cent. of those reporting cases. Infantile paralysis, which was reported by only 0.2 per cent. for 1910, was the stated cause of deafness for 236, or 0.7 per cent. of those reporting. This notable increase was due to the severe epidemics of this disease that have occurred in recent years.

CHILDREN IN INDUSTRY

The total number of children from 10 to 15 years of age engaged in gainful occupations in the United States as of Jan. 1, 1920, was 1,060,858, comprising 714,248 boys and 346,610 girls, according to the Census Bureau. The boys reported as gainfully occupied constituted 11.3 per cent. of the total of 6,294,985 boys aged from 10 to 15 years, and the girls reported as gainfully occupied represented 5.6 per cent. of the 6,207,597 girls within the same age limits. The total number of children gainfully occupied was only slightly more than half as large in 1920 as in 1910, the decrease being 46.7 per cent. The gainfully occupied children reported as engaged in agriculture, forestry and animal husbandry number 647,309, and those employed in manufacturing and mechanical industries, 185,337. These two groups constituted

61 and 17.5 per cent., respectively, and together embraced nearly four fifths of the total number of gainfully occupied children. The textile industries employed 54,649 children, or nearly three tenths of the total number reported for manufacturing and mechanical industries generally.

Book Notices

A TEXTBOOK OF CLINICAL PERIODONTIA. A Study of the Causes and Pathology of Periodontal Disease and a Consideration of Its Treatment. By Paul R. Stillman, D.D.S., Instructor in Periodontia, Columbia University, and John Oppie McCall, A. B., D.D.S., Instructor in Periodontia, Columbia University. Cloth. Price, $3.50. Pp. 240, with 79 illustrations. New York: The Macmillan Company, 1922.

This book consists of six parts, on relation to the basic sciences, the causes of periodontoclasia, the therapeutics of periodontia, the diagnosis of periodontal disease, types of periodontoclasia, and technical procedures. Though one may not feel ready to accept all its teachings, the authors must be given credit for much thought, study and originality in its production. The writers do not assume credit for all of the new nomenclature proposed, giving credit in the greater part for this to a committee on nomenclature composed of members of the American Academy of Periodontology. Many new words have been coined to supplant certain ones in common use. The terms pyorrhea alveolaris and Riggs' disease have never been satisfactory to the student, and efforts have been made by writers to better the nomenclature of pericemental diseases; but as yet none has been entirely accepted by the profession at large. We may be pardoned for expressing doubt that the new names offered in this book will be more satisfactory than those offered by some other writers. While credit must be given for the attempt to establish a better nomenclature, still the authors must not take it too much to heart if the profession does not accept such terms as "periodontoclasia" as a name for the disease under consideration, or "apoxemena" for the deposits on the roots of teeth, and "apoxesis" for the mechanical removal of such deposits, and polishing the roots of teeth. "Ulatrophia," "alveoloclasia" and "pericementoclasia" are some of the other terms used. In Barker's book, "Endocrinology and Metabolism," Hoskins says (page 4): "A fairly complex terminology has been developed in the field of endocrinology and one which, to the casual reader, is likely to give a false sense of security regarding the fundamental data to which it pertains. That the nomenclature has become relatively overextensive has been deplored by Gley and others." This is equally true in the dental field.

Under the heading "The Cell and the Tissues," much is given that could well be deleted, since the facts are well known to those who would read such a book. In the chapter on anatomy it is stated that mesial drifting of molars due to loss of approximal support usually causes the distal cusp to elongate. Of course the authors do not mean to convey the idea that the cusps of teeth grow after they are completely formed. Colloquially this may answer, but in a scientific book greater accuracy of expression is expected. The author defines traumatic occlusion as an occlusal relation which is supposed to produce a pathologic condition in the peridental membrane. The term would seem to be open to criticism, as the adjective "traumatic" does not relate to the occlusion but to the peridental membrane. From the term itself a traumatic occlusion might be supposed to mean an occlusal relation of the teeth that had been modified by trauma, rather than an occlusal relation capable of producing injury to some other tissue. It is probable that any occlusal relation may produce injuries if abnormally used.

The positive statement made in the book that the dental pulp supplies a part of the nourishment to the cellular portion of the cementum has not as yet been accepted by some of the best histologists. No mention is made of the lymphatics in the pericementum. Noyes has definitely shown their existence. *Scrumal* calculus is changed to *scrummal* calculus. The statement that gum recession which follows the placing of a crown is due to "traumatic occlusion" rather than to the irritation caused as a result of a badly fitted crown, cannot be accepted. That poor occlusion plays a part in absorption is doubtless true; but poorly fitting crowns which afford food traps must be an important factor in pocket formation, since such pockets eventually lead to gum and pericemental absorption.

While gutta percha is tolerated in the jaws when removed from the oral flora, it is of doubtful value when placed, as recommended by the authors, in the treatment of "pericementoclasia" in the bifurcations between the roots of molar teeth, the roots of which have been exposed by destruction of the gums, pericementum and alveolar process.

In speaking of the investigations of Miller, Black, Talbot and others, it is stated that while their work is important, their "lack of sufficient comprehension of etiology has influenced their attitude as regards the possibility of repair!"—that is, the repair of the pericemental tissues.

In the recommendations for treatment one finds little other than the scraping and polishing of the roots of affected teeth, correction of "traumatic occlusion" and correct brushing by the patient.

Those having had much experience can cheerfully acquiesce in the statement made by the authors that diagnosis based on roentgenograms alone is unsafe.

The sequences of the chapters might be improved. The illustrations are good and the diagrammatic drawings accompanying the pictures made from photomicrographs are helpful.

GEOGRAFIA MEDICA DE LA ISLA DE MARGARITA. Por el Dr. Andres Sánchez, Doctor en Medicina y Cirujia de la Universidad Central de Venezuela. Con un Prólogo de Francisco A. Risquez, Director y Profesor de la Escuela de Medicina de Caracas. Paper. Pp. 71, with 10 illustrations. Caracas: Tip. Americana, 1921.

This study in medical geography is one of the best recent efforts in the great field which Drake raised to such a height in this country. Margarita, or Paraguachoa, to give its Indian name, is a little island of 440 square miles, off the north coast of Venezuela, with a population of about 60,000 Indians, Spaniards and half castes with a touch of negro and Syrian blood. Its chief industry is pearl fishing, which amounts to millions of dollars each year, other industries being goat raising, fishing, and magnesite mining by an American firm. In the first part of the book, dealing with geography, history, ethnology and climatology, the author has sketched a vivid picture of the mild climate, beautiful beaches, tasty tropical fruits, varied fishes and turtles, man-eating sharks, brief storms, arid soil, the peculiar phosphorescent "Turbio" and natural healthfulness, which have gained for Margarita its nickname of "natural sanatorium." In the second part, devoted to nosography, he dwells on the diseases mostly prevalent, such as typhoid fever, tuberculosis, harelip, "Macanao fever" and tetanus neonatorum, and points out the remedy. Americans who travel all the way to Gauguin's southern seas might do much worse than take an eight-day sail to Venezuela to see Dr. Sánchez' paradise.

HYGIENE OF WOMEN AND CHILDREN. By Janet E. Lane-Claypon, M.D., D.Sc., Dean and Lecturer on Hygiene in the Household and Social Department, King's College for Women. Cloth. Price, $5. Pp. 354, with 71 illustrations. New York: Oxford University Press, 1921.

This book considers the hygiene of women and children and is intended for nurses and helpers, though the authoress hopes that it will be of assistance to all who are interested in health. It discusses a variety of subjects of interest to the people of the British Isles, though the rules of hygiene are of universal application and are modified in civilized countries only by social and economic conditions. The chapter on the home contains many wholesome suggestions, and is interestingly written. The chapters on food should be of special help to nurses and dietitians. Extensive tables which give the percentage composition of foodstuffs and the approximate cost for each thousand calories are included. The volume adds nothing new to scientific knowledge, but it will serve as a practical guide and a reference book containing many useful facts in relation to the hygiene of women and children.

Medicolegal

Validity of License Tax on Physicians

(City of Redding v. Dozier (Calif.), 206 Pac. R. 465)

The District Court of Appeal of California, Third District, in affirming a judgment in favor of the plaintiff city for $10, which was alleged to be due as a license tax imposed under an ordinance adopted by the city, says that the defendant was a physician and surgeon residing and practicing in the city and having his office at his place of residence. The city is one of the sixth class. The ordinance was entitled "An ordinance to license various classes of business, shows, exhibitions and games within the city of Redding for the purpose of revenue and regulation, and fixing the rates of license tax upon the same and providing for the collection of the same by suit or otherwise." Section 1 provided that every person, firm, etc., who had a fixed place of business, and engaged in, carried on, or conducted any business, exhibitions or games described in this ordinance, within the city, should pay a license therefor in the amount thereinafter specified. Section 2 provided that the licenses to be paid, the persons who should be required to pay the same and the business on which the same were to be paid were, besides others, "(29) Lawyers, doctors and dentists, $5 per quarter." The principal question raised was whether the city had authority to impose the tax. The court thinks that it had, under the statutes of the state. In *Ex parte Johnson* (Calif. App.), 190 Pac. 852, it was held that a city may impose a license tax for carrying on the business of a lawyer at a fixed place of business. In *Ex parte Galusha*, 184 Calif. 697, 195 Pac. 406, the Supreme Court of California reached the same conclusion. It must be held that the same rule applies to a physician and surgeon.

The complaint in the present case alleged that the "defendant was and now is a doctor practicing medicine and having his office and principal place of business in the city of Redding." The defendant argued that the allegation as to place of business was not the equivalent of a "fixed place of business." The court deems the criticism hypercritical. The defendant testified that he had a large practice; that he received patients at his residence and performed operations there; that he regularly kept patients at his residence for treatment when they required close observation; that there was no room in his residence designated as an office, but that he treated his patients in the living room; and that he treated most of his patients at their homes. The foregoing evidence, coming from the defendant, the court thinks showed conclusively that he had a fixed place of business and that the alleged defect in the complaint, if conceded to be a defect, could not have prejudiced his rights.

Hearing was denied by the Supreme Court of California.

When Is One Rendered Not in "Good Health" by Influenza or Precedent Conditions?

(Bleckenstein v. Provident Insurance Co. (N. D.), 186 N. W. R. 91)

The Supreme Court of North Dakota, in affirming a judgment in favor of the plaintiff on a policy of life insurance, says that her husband, a farmer, aged 24, was apparently in perfect health when he signed the application for insurance, Oct. 21, 1918, and when the policy was issued, October 30, and so continued until the evening of November 8, when the policy was delivered, except that he complained of a headache in the evening of November 6 and during the day of November 7. During the evening of November 8, he developed a fever; the following day he had a high fever and was confined in bed a part of the time. On the afternoon of November 10, he died of bronchopneumonia, following an attack of influenza. In the application for insurance, there was a stipulation that the policy should not take effect unless it was delivered to and received by the insured while in good health. All of the evidence concerning his good health subsequent to the issuance of the policy and until his death was dependent solely on lay testimony, unaided by that of medical science.

On the record, when was the insured not in good health? When does an attack of influenza, or the existence of bodily conditions precedent thereto, render one not in good health? Apparently, if the court were to speak from statistics and the visual and mental knowledge forcibly brought to its attention during the epidemic of influenza in 1918, the disease was no respecter of persons. It attacked those apparently physically well and strong as readily as those otherwise. It attacked the young and vigorous in perhaps even greater numbers than the old, the weak. One might be apparently perfectly well today, and on the morrow, attacked by the disease, nigh unto death. Does a headache render one not in good health? Nature's signals concerning one's bodily conditions are constantly being given. Perhaps, speaking out of experience and medical lore, not yet too definitely nor exactly known concerning influenza, the court would readily say as a matter of fact, that the insured must have been necessarily in poor health on November 8, because then the disease was at work, and he died on the tenth. If the matter was to be determined on the record and by lay testimony, was not the question made one of fact for the jury, a question on which the minds of reasonable men might differ? On this record the court so believes and determines.

Cost of Tours to Regain Health Not Recoverable

(San Antonio Machine & Supply Co. v. McKinley (Texas), 239 S. W. R. 340)

The Court of Civil Appeals of Texas, in reversing a judgment that plaintiff McKinley obtained for damages for personal injuries alleged to have been caused by the negligence of the defendant company, very briefly says that the railroad fare paid by plaintiff to Del Rio from San Antonio should not have been considered as a part of the damages. Damages cannot be measured by amount paid out for tours to regain health.

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Oto-Laryngology, Minneapolis, Sept. 19-23. Dr. Luther C. Peter, 1529 Spruce St., Philadelphia, Sec'y.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Albany, N. Y., Sept. 19-21. Dr. James E. Davis, 111 Josephine Ave., Detroit, Secretary.

American Association of Railway Surgeons, Chicago, Oct. 18-20.

American Child Hygiene Association, Washington, D. C., Oct. 12-14. Miss G. B. Knipp, 111 Cathedral St., Baltimore, Md., Secretary.

American Electro-Therapeutic Association, New York, Sept. 19-22. Dr. Richard Kovacs, 223 E. 68th St., New York, Registrar.

American Public Health Association, Cleveland, Ohio, Oct. 16-19.

American Roentgen Ray Society, Los Angeles, Sept. 12-16. Dr. H. E. Potter, 122 S. Michigan Ave., Chicago, Secretary.

Association of Military Surgeons of the United States, Washington, D. C., Oct. 12-14. Col. James Robb Church, M. C., U. S. Army, Medical Museum and Library, Washington, D. C., Secretary.

Colorado State Medical Society, Colorado Springs, Oct. 3-5. Dr. F. B. Stephenson, Metropolitan Bldg., Denver, Secretary.

Delaware State Medical Society, Dover, Oct. 10. Dr. W. O. La Motte, Industrial Trust Building, Wilmington, Secretary.

Indiana State Medical Association, Muncie, Sept. 27-29. Dr. Charles N. Combs, Terre Haute, Secretary.

Kentucky State Medical Association, Paducah, Oct. 16-19. Dr. J. A. McCormack, 532 W. Main St., Louisville, Secretary.

Medical Association of the Southwest, Hot Springs, Ark., Oct. 4-6. Dr. W. H. Bailey, 115 West 21st Street, Oklahoma City, Okla., Sec'y.

Minnesota State Medical Association, Minneapolis, Oct. 12-13. Dr. Carl B. Drake, Central Bank Building, St. Paul, Secretary.

Mississippi Valley Medical Association, Rochester, Minn., Oct. 10-12. Dr. Henry Enos Tuley, 244 Francis Bldg., Louisville, Ky., Secretary.

Missouri Valley Medical Society of the, St. Joseph, Mo., Sept. 21-22. Dr. Charles W. Fassett, 115 E. 31st St., Kansas City, Mo., Secretary.

Nevada State Medical Association, Reno, Oct. 6-7. Dr. Horace J. Brown, Goldfield, Secretary.

Pacific Coast Oto-Ophthalmological Society, Salt Lake City, Sept. 14-16. Dr. Edward D. LeCompte, Boston Bldg., Salt Lake City, Utah, Sec'y.

Pennsylvania, Medical Society of the State of, Scranton, Oct. 2-5. Dr. W. F. Donaldson, Jenkins Arcade, Pittsburgh, Secretary.

Vermont State Medical Society, Burlington, Oct. 12-13. Dr. W. G. Ricker, St. Johnsbury, Secretary.

Washington State Medical Association, Tacoma, Sept. 5-6. Dr. C. H. Thomson, 508 Cobb Bldg., Seattle, Secretary.

Wisconsin, State Medical Society of, Green Lake, Sept. 6-8. Dr. Rock Sleyster, Wauwatosa, Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

August, 1922, **24**, No. 2

*Basal Metabolism of Prematurity. II. Relation of Basal Metabolism to Caloric Intake and Weight Curve. F. B. Talbot, W. R. Sisson, M. E. Moriarty and A. J. Dalrymple, Boston.—p. 95.
*Influenzal Meningitis. T. M. Rivers, Baltimore.—p. 102.
*Studies of Nephritis in Children. I. Nephrosis. H. Schwarz and J. L. Kohn, New York.—p. 125.
Oral Disorders in Pediatrics. S. A. Cohen, Boston.—p. 160.
Epidemic of Streptococcus Hemolyticus Septicemia. L. H. Smith, Portland, Ore.—p. 171.

Basal Metabolism of Prematurity.—The basal metabolism of seven of twenty-two premature infants studied by Talbot et al. in its relation to the caloric intake and the weight curves was strikingly low. They did not gain in weight until they were able to digest approximately 200 calories in the day. The only food completely assimilated to accomplish this was human milk. A relatively large proportion of the food intake goes to form new body tissue. The large excess of the caloric intake over the basal metabolism was necessary because of the relatively greater amount of growth essential for the normal development of these babies.

Influenzal Meningitis.—The records of 197 cases of influenzal meningitis are reviewed by Rivers and twenty-three new cases are reported. Seventy-nine per cent. of cases occurred in patients under 2 years of age. The mortality in 220 cases was 92 per cent. Of the seventeen patients who recovered twelve were 2 years of age or older. From the case records it is possible to say that the meningitis might have been primary in the majority of instances. The disease is produced by a group of influenza bacilli which are closely allied culturally and serologically. Treatments of various kinds have been used, but as far as can be determined none has accomplished much.

Nephritis in Children.—Schwarz and Kohn's treatment of these patients is to keep them in bed while they manifest edema, place them in the best hygienic surroundings, on an absolutely salt free diet, with a normal amount of fat and carbohydrate and an amount of protein somewhat in excess of the normal and a fluid intake almost that of the normal. If this does not suffice, they have added thyroid extract in increasing amounts. As far as a cure of the disease is concerned, the reduction of the albumin in the urine, the cholesterin and fat in the blood, this the authors have been unable to accomplish.

American Journal of Physiology, Baltimore

July, 1922, **61**, No. 2

*Effect of General Excitement and of Fighting on Some Ductless Glands of Male Albino Rats. T. Uno, Philadelphia.—p. 203.
Studies on Conditions of Activity in Endocrine Glands. XI. Further Evidence for Reflex and Asphyxial Secretion of Adrenin. W. B. Cannon and R. Carrasco-Formiguera, Boston.—p. 215.
"All-Or-None" Principle Applied to Mammalian Nerves and Reflex-Arcs. J. M. D. Olmsted and W. P. Warner, Toronto.—p. 228.
Studies on Alkaligenesis in Tissues. II. Ammonia Production in Muscle During Contraction. O. P. Lee and S. Tashiro, Cincinnati.—p. 244.
Production of Suprarenal Discharge by Piqûre. R. Carrasco-Formiguera, Boston.—p. 254.
Action of Ultraviolet Rays on Arbacia Eggs, Especially as Affecting Response to Hypertonic Sea Water. R. S. Lillie and M. L. Baskervill, Cleveland.—p. 272.
*Influence of Hydrogen Sulphid on Respiration. H. W. Haggard and Y. Henderson and T. J. Charlton, New Haven, Conn.—p. 289.
Effects of Prostate Substance on Metamorphosis of Intestine of Frog Tadpoles. R. W. Hegner, Baltimore.—p. 298.
Studies on Mechanism of Increased Metabolism in Hyperthyroidism. J. Aub, E. M. Bright and J. Urdil, Boston.—p. 300.
Relative Growth of Individual Boston School Boys. W. T. Porter, Boston.—p. 311.
*Effect of Suprarenalectomy on Total Metabolism of Cat. J. C. Aub, J. Forman and E. M. Bright, Boston.—p. 326.
Metabolic Effect of Suprarenalectomy on Urethanized Cat. J. C. Aub, E. M. Bright and J. Forman, Boston.—p. 349.
Preliminary Dilatation a Phase of Pupillary Light Reflex. J. Bryne, New York.—p. 369.
Calcium Phosphate Metabolism in Diagnosis of Rickets. J. F. McClendon, Minneapolis.—p. 373.
Alkaline Reserve of Blood of Fish in Relation to Environment. E. B. Powers, Lincoln, Neb.—p. 380.

Effect of Excitement on Ductless Glands.—Forty-one male albino rats, stimulated and fighting for from one to six hours, were examined by Uno to determine whether there was a modification in the weight, the water content and the action of the extracts of the thyroid, suprarenals and hypophysis. The results for the thyroid and the suprarenals were entirely negative. The results for the hypophysis were positive. After from three to six hours' stimulation and fighting, the hypophysis increased in weight, but no significant change in the percentage of water was found. The extracts of the test glands caused a contraction of the intestinal strip—the response characteristic for the glandular portion of the hypophysis—while that of the control glands gave the usual relaxation. This modification of the extract followed stimulation alone or fighting alone—but did not appear until after one hour of excitement. The rhythmic contractions of the intestine always persisted under the test extract.

Influence of Hydrogen Sulphid on Respiration.—Haggard et al. state that sodium sulphid (2 mg. per kilo) when injected intravenously liberates hydrogen sulphid in the blood and induces hyperpnea followed by apnea vera. This does not occur (with the exception among many experiments) after section of the vagi. Apparently, therefore, the stimulating action of sulphid on respiration is chiefly due to irritation of the afferent endings of the pulmonary vagi. On the respiratory center small amounts of sulphid are generally without perceptible effect. Larger amounts paralyze respiration.

Effect of Suprarenalectomy on Metabolism.—Forty-eight hours after the removal of both suprarenal glands in the cat, Aub et al. found a reduction of about 25 per cent. in the total metabolism without marked change in the relative percentages of foodstuffs burned. Control experiments on completely fasting and operated cats show a fall in metabolism less than half the magnitude of that seen after suprarenalectomy. Removal of one suprarenal causes a temporary fall, but a return to normal metabolism. Denervation of the remaining suprarenal is followed by a slow fall of the metabolic rate. The theory is suggested that whereas the thyroid is the slowly acting regulator of the metabolic mechanism, some quick changes of short duration may be controlled by variations in the secretion of the suprarenals.

American Journal of Tropical Medicine, Baltimore

July, 1922, **2**, No. 4

*Leukocyte Formula in Malaria. J. M. Swan, Rochester, N. Y.—p. 283.
*Effect of Quinin on Growth of Malaria Plasmodia in Vitro. C. C. Bass, New Orleans.—p. 289.
*Bacteriology of Leprosy; Diphtheroid in Leprosy. E. L. Walker, San Francisco.—p. 293.
Beriberi in Garrison at San Juan, Porto Rico. B. K. Ashford.—p. 305.
*Relation Between Syphilis and Yaws as Observed in American Samoa. J. C. Parham, Washington, D. C.—p. 341.
*Should Gangosa Be Removed from Nomenclature of Tropical Medicine? W. M. Kerr.—p. 353.
Sir Patrick Manson: Father of Tropical Medicine. E. J. Wood, Wilmington, N. C.—p. 361.

Leukocyte Formula in Malaria.—Sixty-eight differential counts in fifty-five cases were made by Swan: twenty-eight cases of benign tertian malaria; ten cases of estivo-autumnal malaria; three cases of quartan malaria; eleven cases of malaria in which parasites had disappeared from the peripheral blood; and three cases in which examinations were made before the occurrence of clinical malaria; during malarial paroxysms, and at varying periods after the paroxysms had ceased. Ten per cent. is accepted as the high normal percentage of large mononuclear leukocytes in the peripheral blood. On this basis there was an increase of the large mononuclear leukocytes in the peripheral blood in thirty out of forty-four counts in cases with malarial parasited in the blood, or 68.1 per cent. In cases without malarial parasites in the peripheral blood there were seven in which there was an increase of the large mononuclears, out of twelve counts, 58.3 per cent. In the cases in which counts were made before malarial paroxysms were observed, during

malarial paroxysms, and after the paroxysms had ceased, twelve counts were made. There was a large mononuclear increase at the time of paroxysm in two; slight in one (11.6 per cent.); large in the other (33.2 per cent). In the third case there was no increase. This patient was also suffering from sprue. A large mononuclear increase, therefore, is constant in malaria neither in the acute stage of the disease nor in carriers. But if in a suspected case of malaria or of recent malaria there is an increase of the large mononuclear leukocytes, it seems reasonable to assume that the patient has or has had malaria.

Effect of Quinin on Growth of Malaria Plasmodium.—The results obtained by Bass show that quinin in therapeutic proportions prevents the growth of malaria plasmodia in vitro, and, in fact, kills them.

Bacteriology of Leprosy.—The pleomorphic, partly acid-fast diphtheroid of Bordoni-Uffreduzzi and other authors was cultivated by Walker more or less constantly from nasal and other open lesions of lepers, as well as from nonulcerating leprous lesions. This diphtheroid differs in its large size, extreme pleomorphism, peculiar colonies, carbohydrate fermentations and partial acid-fastness from all diphtheroids from other sources adequately described in the literature. A search for the possible saprophytic source of this diphtheroid from leprous lesions has disclosed that it is apparently identical with a diphtheroid cultivable from smegma praeputii, which is probably a cultural form of the pleomorphic and facultative acid-fast *Bacillus smegmatis*.

Relation Between Syphilis and Yaws.—No cases of syphilis were seen by Parham in native Samoans during a period of two and one-half years' service in a hospital which was the only source of medical treatment for a population of more than 7,000 people. Physical examination of more than 3,000 Samoans during a period of six weeks failed to disclose evidence of syphilis. It is believed that the facts cited justify the conclusion that the Samoan is not capable of infection by *Treponema pallidum*, at any rate by the strains of the treponeme that cause syphilis, as known in the Caucasian. Various authors refer to Charlouis' experiment of successfully inoculating a native suffering from typical yaws with syphilis and state there have been many instances of the development of yaws naturally and by inoculation in those affected with syphilis. Considering the great difficulty of differentially diagnosing syphilitic lesions of the skin, Parham submits that it is unscientific to attempt to differentially diagnose syphilitic and frambesial lesions which are alleged to have occurred in the same individual. In Parham's opinion, the lack of ancestral treatment, combined with the difference in personal habits, explains the clinical (frambesial) habitus of syphilis in these natives. When they take on European habits, clothing, and treatment, then tropical yaws begins to appear more and more as ordinary syphilis. Yaws may be defined, then, as "stone age syphilis." At any rate, in human beings it seems to immunize to syphilis, and if this observation is correct, the last differential point supporting the duality theory falls to the ground. If the natives do not have syphilis, then, why do they not have it? They must be immune to it. The only known protection against syphilitic infection is the actual presence of *Treponema pallidum* in the body at the time the infecting contact is made, and since contact between Samoans and Caucasians has existed for two hundred years, the conclusion is drawn that the Samoan is protected from syphilis by infection with *T. pertenue*, which is doubtless a strain of *T. pallidum*.

Gangosa Is Late Syphilis or Late Yaws.—Kerr urges the disuse of the term gangosa, and to place the ulcerations which the term was employed to describe into the category of late syphilis or late yaws.

Annals of Surgery, Philadelphia

July, 1922, **76**, No. 1

*Intramuscular Administration of Sodium Citrate, New Method for Control of Bleeding. H. Neuhof and S. Hirshfeld, New York.—p. 1.

*Factors Which Influence Longevity in Cancer. W. C. MacCarty, Rochester, Minn.—p. 9.

Fatal Outcome of Certain Cases of Staphylococcus Infections of Face and Lips. W. Martin, New York.—p. 13.

*Hemangiomas of Gastro-Intestinal Tract. E. S. Judd and F. W. Rankin, Rochester, Minn.—p. 28.

Modification of Kader Operation Based on Thirty-Two Gastrostomies. T. A. Shallow, Philadelphia.—p. 35.

Treatment of Acute Perforations of Stomach and Duodenum with Reference to Gastro-Enterostomy. A. O. Wilensky, New York.—p. 38.

Duodenal Diverticula: Report of Four Cases. W. A. Downes, New York.—p. 43.

*Tumors of Kidney in Infancy and Childhood. C. G. Mixter, Boston.—p. 52.

Intraperitoneal Rupture of Bladder: Report of Cases. T. T. Thomas, Philadelphia.—p. 64.

Bony Features of Posterior Congenital Dislocation of Shoulder. T. W. Todd, Cleveland.—p. 70.

Fractures of Capitellum and Trochlea: Three Cases. M. C. Lindem, Chicago.—p. 78.

Injury of Limbs Due to Back-Fire. A. H. Bizarro, London, Eng.—p. 83.

*Transplantation of Entire Fibula in Cases of Loss of Tibia from Osteomyelitis. W. R. MacAusland and A. F. Sargent, Boston.—p. 91.

Fibrous Tumors of Foot. M. Thorek, Chicago.—p. 101.

Surgical Treatment of Uterine Prolapse: End Result in Thirty Cases. J. M. Hundley and J. M. Hundley, Jr., Baltimore.—p. 106.

New Mechanics in Bone Injuries. H. C. Masland, Philadelphia.—p. 110.

Sodium Citrate Intramuscularly to Control Bleeding.—The administration of sodium citrate intramuscularly, intravenously, or subcutaneously, Neuhof and Hirschfeld noted, results in prompt and pronounced shortening of coagulation and bleeding time. This is a hitherto unrecognized pharmacologic action of the drug. The shortened coagulation time is of from two to three hours' duration, with gradual return to the normal within from twenty-four to forty-eight hours. The sodium citrate curve occurs not only in persons with normal coagulation and bleeding time, but also in those in whom there is pathologic prolongation, notably in jaundice. It does not occur in blood diseases characterized by blood platelet deficiency—hemophilia and purpura. These diseases appear to comprise the sole contraindication to the use of sodium citrate for the control of bleeding. The dose for intramuscular administration of sodium citrate is 9 gm. for adults. A 30 per cent. solution is used, 15 c.c. being injected into each buttock, preceded by procain. The intramuscular method is free from danger, no untoward results having been noted in 200 cases. Internal as well as surgical bleeding, hemorrhage not only in normal persons, but also in those with prolonged coagulation time are decisively controlled by sodium citrate injections in the great majority of cases. These are cases of oozing surfaces or hemorrhage from small vessels, for control of hemorrhage from large vessels cannot be expected with the dosage of the drug at present employed. The method is said to offer as well a large sphere of usefulness as a prophylactic measure against oozing at operation, especially in cases in which much bleeding is anticipated.

Factors Influencing Longevity in Cancer.—Specimens were studied by MacCarty to determine the frequency and possible influence of lymphocytic infiltration, fibrosis, hyalinization and cellular differentiation on postoperative longevity. An examination of the facts revealed that the average length of postoperative life is greater when the factors are present singly or in combination. Differentiation and hyalinization apparently play the greatest rôle in influencing the longevity.

Hemangiomas of Gastro-Intestinal Tract.—At the Mayo Clinic three patients with angioma of the stomach and one with angioma of the duodenum have been operated on in the past two years; two of the patients were young, and two were of cancer age. The advanced age of these two patients and the roentgen-ray findings, similar to those in malignancy, suggested inoperable malignant lesions. In all cases the tumor was removed and operation was followed by an excellent immediate and late result.

Tumors of Kidney in Children.—Mixter emphasizes the frequency of malignant tumor of the kidney region in infancy, the insidiousness of its onset, and the necessity of its early recognition, as the tendency to recurrence is so great that only by its early surgical removal can a cure be expected. He analyzes twenty-seven cases. In striking contrast to the adult, hematuria is rare, and there are no early symptoms. Hematuria occurred only twice in these cases, and microscopical evidence from the sediment was obtained only seven times. Listlessness, malaise, loss of weight, diarrhea or constipation, and sometimes vomiting is noted by the parents,

but almost invariably the symptom that brings the child to the doctor is abdominal distention or the actual discovery of the tumor by the parents. In other words, there are no early symptoms. Pain or abdominal discomfort was present in 50 per cent. of the cases; usually it is dull and dragging and rarely sufficient to excite suspicion. A slight elevation of temperature of from 1 to 3 degrees is frequent. In nearly two-thirds of the cases, a month, and frequently much more, elapsed after the onset of symptoms which were manifestations of advanced disease, before the child was admitted to the surgical service. The children with one exception were all under 5 years of age, the average age of those with embryoma being 3½ years and those with neuroblastoma being 1¾ years. Twenty-three patients were operated on and four cases came to necropsy without surgical interference. Nephrectomy in fourteen cases gave an operative mortality of 35 per cent. Nine cases of simple exploration were followed by 44 per cent. mortality. Of the nine cases surviving nephrectomy, with one exception all showed rapid recurrence, death occurring in from four months to one and one-half years. It is interesting to note that the single exception differed in no way either clinically or pathologically from the other cases of embryoma. The tumor was of large size and no postoperative radiation or serum was given. The child is alive and well at the present time, three and one-half years following nephrectomy. Of the twenty-seven cases, no pathologic report was obtained in four, five were neuroblastomas, one was small spindle cell sarcoma and the rest were embryomas.

Transplantation of Entire Fibula.—MacAusland and Sargent report four cases and summarize the literature. The functional result was excellent in each of the authors' cases.

Boston Medical and Surgical Journal

Aug. 3, 1922, **187**, No. 5

Endocrine Therapy. W. B. Cannon, Boston.—p. 163.
Use and Abuse of Thyroid. J. H. Means, Boston.—p. 164.
Suprarenal Therapy. C. H. Lawrence, Boston.—p. 168.
Parathyroid Deficiency and Its Treatment. F. H. Lahey, Boston.—p. 170.
Pituitary Gland Therapy. W. R. Ohler, Boston.—p. 173.
Epidermophytosis. A. M. Greenwood, Boston.—p. 176.
*Automobile Exhaust Gas as Health Hazard. Y. Henderson, New Haven, Conn.—p. 180.
Rupture of Ovary with Massive Hemorrhage as Complication of Acute Appendicitis. H. S. Penn, Lawrence, Mass.—p. 183.

Aug. 10, 1922, **187**, No. 6

Use of Pathologic Material in Small Hospitals. J. F. Kenney, Pawtucket, R. I.—p. 195.
What Medical and Surgical Statistics Should Be Published in Annual Hospital Report? D. Cheever, Boston.—p. 199.
Place of Full Time and Part Time Physician in Modern Hospital. R. I. Lee, Cambridge, Mass.—p. 204.
Treatment of Asthma. F. M. Rackemann, Boston.—p. 211.
Violet Ray in Treatment of Variola. P. Romeo, Bridgeport, Conn.—p. 215.

Automobile Exhaust Gas as Health Hazard.—Carbon monoxid is practically the sole toxic constituent in exhaust gas when pure gasoline is burned. Gasoline, as sold in some places, is mixed with coal distillate, which contains benzol, and produces a correspondingly more toxic exhaust gas. Gasoline vapor itself has been found to have qualities somewhat like those of ethyl ether. It is an anesthetic, but the stage of excitement passes through a very narrow region of full anesthesia into convulsions ended by death. In the toxicity of exhaust gas unburned gasoline is not an appreciable factor. Workmen are, however, sometimes overcome when they go into a large tank in which gasoline has been stored. Benzol is much more toxic. Henderson's investigations have led on to the study of the treatment of carbon monoxid poisoning. Obviously, the first step must be the restoration of spontaneous breathing, if it has stopped. For this purpose the manual prone pressure method of artificial respiration is to be recommended above any apparatus, for it is as effective, or even more effective, than apparatus, and it can be applied instantly, while the bringing and adjustment of apparatus involves delay. A delay of even a few minutes may sometimes be fatal. The next step, after spontaneous breathing, must obviously be to accelerate the elimination of carbon monoxid from the blood. For this purpose the inhalation of oxygen has long been recognized as the specific procedure. But the difficulty arises that after a long exposure to an atmosphere containing carbon monoxid, respiration is very much depressed, and the inhalation of oxygen has no very stimulating effect on the volume of breathing. It occurred to Haggard and Henderson to utilize the stimulating action of carbon dioxid. A deeply asphyxiated patient, who can be reached within one-half hour and who is then given inhalations of oxygen containing 5 per cent. carbon dioxid, can practically be freed from carbon monoxid within from thirty to forty minutes. Frequently also consciousness returns.

Journal of Parasitology, Urbana, Ill

Correlation of Life Cycle of Parasite with Metamorphosis of Host. N. Nowlin, Lawrence, Kan.—p. 153.
Development of Fasciolopsis Buski Lankester. K. Nakagawa, Taichu, Formosa.—p. 161.
Development of Heterakis Papillosa Bloch in Chicken. C. Uribe, Cambridge, Mass.—p. 167.
Escape of Cercariae from Their Snail Hosts. William W. Cort, Baltimore.—p. 177.

Kansas Medical Society Journal, Topeka

August, 1922, **22**, No. 8

Ophthalmic Therapeutics. J. W. May, Kansas City.—p. 229.
Treatment of Vernal Catarrh. J. R. Scott, Ottawa.—p. 234.
Blood Sugar Curves in High Blood Pressure Cases. D. R. Black.—p. 236.
Nonsurgical Drainage of Gallbladder. M. Hahn, Arkansas City.—p. 242.
Facial Expression and Its Psychology. A. A. Allen, Colby.—p. 244.

Laryngoscope, St. Louis

July, 1922, **32**, No. 7

Involuntary Nervous System of Nose, and Mechanism of Some Obscure Nasal Symptoms. L. Hubert, New York.—p. 493.
Sensitization in Vasomotor Rhinitis. H. M. Rich, Detroit.—p. 510.
Case of Posttonsillectomy Pulmonary Abscess. G. Fetterolf, Philadelphia.—p. 517.
Very Severe Tinnitus Aurium Associated with Marked Dental Infection. S. Tousey, New York.—p. 523.
Case of Sinus Thrombosis with Exploration of Jugular Bulb. J. L. Mayhaum, New York.—p. 526.
Typical External Operation for Abscess Descending from Upper Air Passages and Base of Tongue. O. Glogau, New York.—p. 529.
Selfretaining Mastoid Retractor. M. M. Cullom, Nashville, Tenn.—p. 558.

Michigan State Medical Society Journal, Grand Rapids

August, 1922, **21**, No. 8

Profession of Michigan and University of Michigan. M. L. Burton, Ann Arbor.—p. 313.
Functions of Public Health Nurse. D. Littlejohn, Ispheming.—p. 317.
*Value of Whooping Cough Vaccine. H. S. Berman, Detroit.—p. 319.
Heel of Achilles. J. E. G. Waddington, Detroit.—p. 322.
Radiation in Treatment of Blood Diseases. L. D. Stern, Ann Arbor.—p. 324.

Value of Whooping Cough Vaccine.—Berman thinks it seems fair to draw the following conclusions from 1,140 cases observed and reported: There is no universal standard of doses for pertussis vaccine to date, except that larger doses than in the past are recommended. The doses in general use have been apparently too small. The course of the disease in most cases has not been much under six weeks. It is Berman's belief that the earlier the treatment is given the better the result. Conclusions drawn from the treatment of about 400 cases of pertussis with vaccines are that a certain number will respond favorably with commercial vaccine. The initial dose should be at least 2,000 million, increasing to 12,000 million.

Military Surgeon, Washington, D. C.

August, 1922, **50**, No. 2

Measures for Development of Organization and Extension of Usefulness of Medical Reserve Corps' Systems of Government. J. R. Kean.—p. 113.
Treatment of Fractures. T. S. Mebane.—p. 130.
Brief Summary of Vital Statistics of U. S. Army During World War. A. G. Love, Washington, D. C.—p. 139.
Employment of Zigzag Incisions in Covering Large Scalp and Skull Defects in War Surgery of Head. A. M. Hanson, Faribault, Minn.—p. 169.
Via Veneris. H. H. Rutherford.—p. 173.
Development of Venereal Battalion. C. M. Williams.—p. 177.
Vaccination Against Pneumonia. P. C. Field.—p. 187.
History of Military Medicine. F. H. Garrison.—p. 201.

Neurological Bulletin, New York

November-December, 1921, **3**, Nos. 11-12

Angiosarcoma of Left Superior Parietal Lobule with Cortical Anesthesia. H. A. Riley, New York.—p. 349.
Practice of Psycho-Analysis in Public Clinic. P. R. Lehrman, New York.—p. 362.
Value of Psychometric Examinations in Psychiatric Work. P. Blanchard, Red Bank, N. J.—p. 370.
Multiple Sclerosis in Children; Report of Three Cases. I. S. Wechsler, New York.—p. 379.
Case of Spinocerebellar Ataxia. L. H. Cornwall, New York.—p. 382.

New York Medical Journal and Medical Record

Aug. 2, 1922, **116**, No. 5

Eczema. H. B. Mills, Philadelphia.—p. 125.
Chronic Abdominal Conditions Encountered in Adults and Children. A. Bassler, New York.—p. 126.
Two Cases of Subdiaphragmatic Abscess Complicating Appendicitis. W. B. Dinlaw, Philadelphia.—p. 129.
*Congenital Diaphragmatic Hernia. L. Blumenfeld, Brooklyn.—p. 131.
Acute Abdominal Conditions in Children. M. Behrend, Philadelphia. —p. 132.
Furuncles of Ear Canal. J. A. Glassburg, New York.—p. 135.
Acute Mastoiditis. C. H. Smith, New York.—p. 139.
Analysis of End Results of Tonsillectomy and Adenoidectomy. S. A. Blauner and S. Z. Orgel, New York.—p. 142.
Tonsillectomy in Children with Endocarditis and Frequent Tonsillar Infections. M. H. Kaiden, New York.—p. 145.
Early Effects of Combined Endocrine Therapy in Defective Children. L. V. Kear, Oyster Bay, N. Y.—p. 147.
Tuberculosis of Hip. B. F. Buzby, Philadelphia.—p. 150.
*Bees' Honey in Substitute Infant Feeding. P. Luttinger, New York. —p. 153.
Hemorrhagic Disease of New-Born. A. D. Kaiser, Rochester, N. Y.— p. 156.
*Cause of Whooping Cough. T. P. Hall, Vancouver, Can.—p. 158.
Some Diagnostic Points in Scarlet Fever. H. R. Mixsell, New York.— p. 159.
Medical Aspect of Carious Teeth in Infancy and Childhood. J. Marcus, Atlantic City, N. J.—p. 161.
Acute Intestinal Obstruction Due to Appendicitis. H. Apfel, Brooklyn. —p. 163.

Congenital Diaphragmatic Hernia.—Blumenfeld's patient, on being born, gave a little gasp and a faint cry and made a forced attempt at inspiration. With every attempt the intercostal and subcostal spaces would retract, the shoulders heaving upward, and the thighs and legs flexing on the abdomen. Behrend tried all of the described methods of artificial respiration, but none seemed to relieve the progressive and increasing asphyxia, the only result being the forced attempts at inspiration. The child was becoming quite cyanotic and oxygen inhalations were given. Soon after the administration of oxygen the cyanosis disappeared and the child assumed a healthy color in spite of the inefficient respirations. The tugging and labored efforts at inspiration persisted. As long as the child was kept in a basin of water at body temperature and supplied with oxygen the color remained good, but as soon as the oxygen was taken away the cyanosis returned. The point of greatest intensity of the heart sounds was in the right anterior axillary line at about the fifth interspace. The heart rate was about forty-five a minute. The efforts at inspiration gradually became weaker and less labored and the child died an hour and a half after birth. The only external physical defect present was a marked right talipes equinovarus and to a less degree a left talipes equinovarus. A premortem diagnosis of congenital atelectasis with transposition of the organs was made. On opening the abdomen, the liver was found much enlarged and filling the greater part of the abdominal cavity. The only other visible content of the abdomen was the sigmoid, which was well filled and distended with meconium. The descending colon disappeared through a slit in the diaphragm caused by the separation of the diaphragm from the posterior abdominal wall. The opening was about one quarter of an inch to the left of the aorta. On removing the anterior chest wall the thorax was found filled with small intestines right up to the neck. It also contained the whole stomach and the large intestines. The heart and lungs were not visible. On pushing aside the small intestines from the right side of the thoracic cavity the pericardium was exposed. The apex corresponded to the fifth interspace in the anterior axillary line. The lungs were rudimentary and occupied the posterior part of the thorax.

Honey for Infant Feeding.—Luttinger asserts that honey is indicated in any condition of the intestinal tract in which the assimilation of starch or the disaccharids is delayed and when prompt absorption of energy is desired. A solution of honey in water (one teaspoonful of honey to a glass of water) is almost as quickly absorbed as alcohol and its effect is more lasting. The largest part of the honey sugar is fructose (levulose), a levorotatory monosaccharid which seems to have a peculiar affinity for the body cells; thus it is rarely, if ever, found in the urine of diabetic patients. It is more rapidly absorbed than lactose and it has not the disadvantage of undergoing butyric acid fermentation like maltose; hence it does not produce acidosis. Its rapid absorption prevents it from undergoing alcoholic fermentation and infants fed on honey rarely show signs of flatulence. Another advantage of honey over sugar is its protein content, mainly derived from the pollen of plants. Fresh honey, especially virgin honey directly obtained from the honeycomb, has a decided laxative action which it loses on boiling. Luttinger uses honey as a routine component of all his formulas for substitute infant feeding. The results obtained in 419 cases studied so far lead Luttinger to plead for a more general use of honey. He also uses honey in marasmus, rickets, scurvy, malnutrition, and other conditions, in which he formerly prescribed the various sugars, cod liver oil or patent foods.

Lavage in Treatment of Whooping Cough.—In eight cases of whooping cough treated by Hall, lavage of the stomach has cured the disease in from three to six days. The relief is immediate. After the first day's treatment the spasms lose most of their intensity, and if the treatment is begun early three days is sufficient to end the cough. Lavage is given twice a day, before meals. Diet is restricted to food that is quickly digested, excluding milk, though malted milk may be given with advantage. For lavage Hall uses two quarts of water, at a temperature of 100 F., containing 20 minims of liquor cresolis compositus; and alternates this with water containing from 3 to 4 drams of sodium bicarbonate. The distress caused by the treatment is less than is caused by a spasm of the cough, and is quite negligible after the third treatment.

Pennsylvania Medical Journal, Harrisburg

July, 1922, **25**, No. 10

Importance of Weight Control in Maintenance of Health and in Management of Disease. L. Litchfield, Pittsburgh.—p. 675.
Pyelitis in Pregnancy. P. Titus, Pittsburgh.—p. 680.
Gastrojejunal Ulcer. J. J. Gilbride, Philadelphia.—p. 684.
Specific Instructions for Prevention of Recurrence Following Gastro-Enterostomy. H. M. Armitage, Chester.—p. 687.
Family Syphilis; Its Relation to Public Health. E. Hess, Erie.—p. 691.
Treatment After Operation on Stomach and Intestines When Unaccompanied by Serious Complications. L. J. Hammond, Philadelphia.— p. 696.
Present Status of Radical Mastoid Operation. S. M. Smith, Philadelphia.—p. 699.
Importance of Nursing Slowly. M. Ostheimer, Philadelphia.—p. 705.
Roentgen Ray and Radium in Superficial Lesions. B. H. Jackson, Scranton.—p. 707.
Use of Radium in Bleeding from Nonmalignant Uterus. R. T. Wall, Scranton.—p. 711.

Philippine Islands Medical Association Journal, Manila

November-December, 1921, **1**, No. 6

Case of Poliomyelitis (6) Admitted to Philippine General Hospital During 1921. J. A. Montes.—p. 215.
Case of Hydrops Renum Cysticum. J. Eduque and J. Estrada.—p. 218.
Conservative Treatment in Compression Fracture of Lumbar Vertebrae; Report of Case. C. Reyes.—p. 222.
*Treatment of Umbilical Cord Without Ligature. R. R. Llamas.—p. 224.
*Methods of Cultivating and Identifying Bacillus Acne. H. L. Begley. —p. 229.

Treating Umbilical Cord Without Ligature.—Llamas cuts the cord without ligature, disinfects it with tincture of iodin and cauterizes the stump with silver nitrate to produce a firm coagulum of the albuminous substance of Wharton's Jelly which acts as a hemostatic pad over the cut ends of the vessels. A sterile gauze pad and bandage are applied over the stump.

Identification of Acne Bacillus.—By means of anaerobic cultures made in Sabouraud's medium according to Wright's method Begley has devised a method of identifying the acne bacillus.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

July 29, 1922, **2**, No. 3213

*Brain Surgery. W. Macewen.—p. 155.
Industrial Diseases. J. Glaister.—p. 165.

Brain Surgery.—The main topic of Macewen's presidential address is the history and present postion of brain surgery. Almost all of modern knowledge of cerebral function has been built up within his lifetime. He sketches some of the outstanding advances which have been made. Chief among these is the recognition that different physiologic functions dwell in different parts of the brain. This discovery is paramount, because it was through it that surgical removal of pathologic products became possible.

Glasgow Medical Journal

July, 1922, **118**, No. 1

Middle Age. D. Williams.—p. 1.
Surgeon Invents First Electric Telegraph. C. R. Gibson.—p. 10.
Early Reminiscences. F. Fergus.—p. 21.
Consideration of Some of Claims of New Nancy School. J. I. Suttie and I. D. Suttie.—p. 36.
"Discourse" of Maister Peter Lowe: Extracts and Comments. G. H. Edington.—p. 43.
Medical MSS. and Books in Hunterian Library. M. Ferguson.—p. 51.

Indian Journal of Medical Research, Calcutta

June, 1922, **10**, Supplementary Number

Cercariae Indicae. R. B. S. Sewel.—p. 1.

Indian Medical Gazette, Calcutta

July, 1922, **57**, No. 7

Causation of Lathyrism in Man. H. W. Acton.—p. 241.
Therapeutics of Emetin. R. N. Chopra and B. N. Ghosh.—p. 248.
Extraction of Lens in Capsule. F. F. S. Smith.—p. 253.
*Value of Formol-Gel Test for Syphilis. S. Ramakrishnan.—p. 254.
Case of "Langri's Finger." G. G. Limaye.—p. 256.
Acute "Kodon" Poisoning. A. Swarup.—p. 257.
Removal of Tonsils. A. J. V. Betts.—p. 258.
*Intravenous Quinin in Malaria. R. M. Mukarji.—p. 258.
Case of Abnormal Labor: Hydrothorax and Ascites in Fetus. M. Alam.—p. 260.

Value of Formol-Gel Test for Syphilis.—Ramakrishnan's study of 120 cases shows that the Wassermann test was in agreement with the history in 112 cases and the formol-gel test in seventy-seven cases. The Wassermann positives were fifty-nine cases in agreement and two cases not. The formol-gel positives were forty-seven cases in agreement and twenty-four not.

Quinin Intravenously in Malaria.—Mukarji uses the bihydrochlorate of quinin in from 5 to 10 grain doses dissolved in 20 c.c. of sterile water. The injection is made into the median basilic vein. In cerebral malaria, in comatose, delirious and hyperpyrexial forms where no time should be lost in bringing the system quickly under the influence of quinin, Mukarji insists this should be the method of choice. It is not so risky an operation as it is supposed to be; it is far more safe and far less painful than the intramuscular injection of quinin while it gives the best results in the shortest possible time.

International Journal of Psycho-Analysis, London

June, 1922, **3**, No. 2

Analysis of Patient with Cramp of Spinal Accessory. J. Westerman-Holstijn.—p. 139.
Analysis of Dream of Doubt and Conflict. A. S. Strachey.—p. 154.
Symbolism of Bridge. S. Ferenczi.—p. 163.
Plato: A Forerunner of Psycho-Analysis. O. Pfister.—p. 169.
Disappointment in Love During Analysis. S. Pfeifer.—p. 175.
Psycho-Analysis and Folk Tale. A Rejoinder to a Recent Critic. G. Rocheim.—p. 180.
Child's Birth-Myth Story. S. Herbert.—p. 187.

Journal of Laryngology and Otology, Edinburgh

July, 1922, **37**, No. 7

Position of Laryngology and Otology in Medical Curriculum in Great Britain. A. L. Turner.—p. 317.
Oto-Laryngology in France. St. C. Thomson.—p. 328.
So-called Prolapse of Laryngeal Ventricle, and Eversion of Saeculus. I. Moore, Edinburgh.—p. 333.

Journal of State Medicine, London

July, 1922, **30**, No. 7

Progress of Public Health. D. L. Williams.—p. 293.
Importance of Training in Chemistry to the Bacteriologist. J. M. Beattie.—p. 300.
River Pollution from Milk Depots. W. G. Savage and D. R. Wood.—p. 307.

Lancet, London

July 29, 1922, **2**, No. 5161

*Brain Surgery. W. Macewen.—p. 213.
Relative Rôles of Compulsion and Education in Public Health Work. A. Newsholme.—p. 219.
Restriction of Birth in Relation to National Weal. J. Brownlee.—p. 223.
*Night Sweats: Their Significance and Prevention. M. Paterson.—p. 225.
Calcium and Inorganic Phosphorus Content of Maternal Blood During Pregnancy and Lactation. O. L. V. De Wesselow.—p. 227.
Primary Malignant Growth of Liver in Infants. C. B. Dansie.—p. 228.
Perforated Appendix Removed at Sea Under Exceptional Conditions. H. E. R. Stephens.—p. 229.

Brain Surgery.—Sensory localization, lesions in silent areas, tumors of the hypophysis, physics of the brain and meninges infection, prevention of postoperative adhesions, tubercle of the brain, and neoplasms of the cerebellum are the subjects discussed by Macewen in this lecture. He emphasizes the fact that the more one sees of the intricate, delicate structure of the brain, the greater the reverence one entertains for it, and the less one is inclined to disturb its arrangements or to interfere with its function. When it does require to be touched, it ought to be with the greatest gentleness, by an acutely sensitive finger, carefully trained and guided by the gift of memory of tactile sensations, to which each new impression may be quickly relegated, grouped, and correlated in ordered sequence. When neoplasms have to be removed therefrom the endeavor is to do so with minimal disturbance of brain tissue. It is for this reason that the impetus received from the intrinsic cerebral pulsations are utilized to aid the extrusion of blood clot or neoplasm through the incision in the brain once adhesions have been loosened, as, though this method takes more time, it does less damage. Cerebral surgery has been the means of adding to and confirming the knowledge of brain function in man, especially of the regions of the cerebral cortex other than motor, to which experimentation on the lower animals can with difficulty contribute. It has laid bare physical lesions in the cerebrum producing mental aberration, and, by the removal of the lesion and the restoration of cerebral function, has thereby proved that the presence of the lesion was the cause of the perversion of function. In a sense some of these lesions produced in the brain of man may be regarded as experiments carried out by nature with a delicacy, accuracy and refinement which no human experimenter could equal. Surgery of the brain has its limits, but these have not been reached.

Night Sweats.—Paterson urges that night sweats should be called slumber sweats, as they do not occur except when a person sleeps. In early stages of pulmonary tuberculosis, and in the absence of any other infection, they are often the one indication of active tuberculosis. Slumber sweats can in nearly all cases be prevented without drugs by sleeping on a grass mat over the mattress. Sleeping without a mattress on canvas will stop sweats. The sweats are due to the presence of bacterial products (toxin) in the blood in large quantities; they can, therefore, occur in any bacterial disease, and are not in any way diagnostic of pulmonary tuberculosis.

Primary Malignant Tumor of Liver in Infants.—In collecting reported cases of primary growth of the liver, Dansie confined himself to those occurring in infants up to 2½ years. Altogether there are twenty-three cases. The age occurrence shows the greatest frequency in the first six months of life. He reports one case in which the tumor, a duct carcinoma, had doubtless originated in connection with the bile ducts, since the cells composing it nowhere resembled those of the liver parenchyma, nor was the growth of any green color suggesting that the cells of the tumor were functioning.

Ascaris in Appendix.—In Stephens' case a female *Ascaris lumbricoides* was found in the appendix and it was the cause of the perforation.

Medical Journal of Australia, Sydney

June 24, 1922, **1**, No. 25

Historical Notes from Records in Brisbane Hospital, 1825-1850. E. S. Jackson.—p. 685.
Industrial Hygiene with Particular Reference to Conditions in Australia. A. J. Lanza.—p. 691.
Flies on Sanitary Site and Typhoid in Boys' Home. J. Dale.—p. 694.

July 1, 1922, **2**, No. 1

Roentgen-Ray Treatment of Cancer. E. H. Molesworth.—p. 1.
*Rupture of Uterus. R. I. Furber.—p. 11.

July 8, 1922, **2**, No. 2

Prognosis in Surgery of Urinary System. B. Smeaton.—p. 27.
Simple Treatment for Tuberculosis (Autotherapy). O. Paget.—p. 28.
Radium Treatment of Carcinoma of Cervix Uteri at Women's Hospital, Melbourne. C. E. Dennis.—p. 32.
Preventive Medicine and Veterinary Science. J. H. L. Cumpston.—p. 34.

Rupture of Uterus During Labor.—After two days of severe pain Furber's patient sustained a rupture of the uterus. The ragged uterine tear ran obliquely across the right border of the lower uterine segment from below upward and backward. The fetus, making its exit through the bare area of the lower uterine segment, had apparently stripped the peritoneum off the side wall of the pelvis as far as the caput ceci, on which a vessel had to be tied, and had broken through the peritoneum anterior to the infundibulopelvic fold. Among the causes for the rupture were to be considered a fat multipara with pendulous, weak abdominal walls, a postmature fetus, a contracted pelvis, a cervix fibrous from child bearing, with a definite deep scar providing a weak spot to rupture, and, perhaps, the trauma from the application of forceps.

Medical Journal of South Africa, Johannesburg

June, 1922, **17**, No. 11

Tendon Transplantation. T. L. Sandes.—p. 217.
Report of Use of Graft. W. Welchman.—p. 224.
Disposal of Animal Manure and Garbage in Relation to Fly Breeding and Prevention of Enteric Fever and Other Intestinal Diseases. L. G. Haydon.—p. 228.

South African Medical Record, Cape Town

July 8, 1922, **20**, No. 13

Nelspoort Tuberculosis Farm Sanatorium Scheme and Tuberculosis Clinics. J. A. Mitchell.—p. 242.
Antimony Treatment in Some Tropical Diseases. F. G. Cawston.—p. 245.
Tendon Transplantation. T. L. Sandes.—p. 248.
Case of Acute Myelitis of Unknown Origin. C. Lundie.—p. 251.

Archives Franco-Belges de Chirurgie, Brussels

April, 1922, **25**, No. 7

*Flattening of Upper Epiphysis of Femur. A. Legg (Boston).—p. 585.
Idem. J. Calvé.—p. 592. Idem. H. Waldenström.—p. 599.
*Osteochondritis of the Hip Joint in Children. G. Nové-Josserand.—p. 606. Idem. E. Sorrel.—p. 625.
*Idem in Adults. L. Tavernier.—p. 614. Idem. Rottenstein.—p. 633.
Idem. P. Guibal.—p. 644.
Atypical Characters of Coxa Plana. J. Moreau.—p. 652.
Deformation of Hip Joint. M. van Neck.—p. 656.
Coxa Plana. E. Delcroix.—p. 659.
Case of Osteochondritis of Hip Joint. Delchef.—p. 669.

The Legg-Calvé-Waldenström Affection of the Hip Joint.—The twelve communications in this profusely illustrated issue of the *Archives* are on this subject, but some call the affection deforming juvenile osteochondritis, while others call it coxa plana. Legg opens the list, and uses the noncommittal heading "Affection characterized by flattening of the upper epiphysis of the femur." He does not attempt to operate. Calvé's title is "Coxa plana, erroneously styled osteochondritis." Waldenström first used the term coxa plana for it. All three discuss the final outcome as well as the origin. Nové-Josserand analyzes the various affections of the hip joint besides the three main types of osteochondritis, coxa vara and deforming arthritis in the young. He insists that there is usually osteochondritis along with the coxa plana. He describes a case of acetabular osteochondritis. This case demonstrates that the only difference between juvenile arthritis deformans and coxa plana is the location of the process. Each may entail destruction of tissue or complete regeneration as the case may be. The bone shadow shows decalcification, and the bone may bend like wax. But before long the bone tissue grows normal again and it may or may not regain its normal outline. According to the age and the site of the lesions, the result is an osteochondritis, arthritis deformans or coxa valga. The bone of these subjects seems to be abnormally susceptible to trauma and infection, and it reacts in a special way to influences that do not affect other persons.

Sorrel relates that in one of Waldenström's cases, one of Calvé's, and one of his own, the hip joint had been examined with the roentgen rays just before the affection developed, and in all three cases the shadow was absolutely normal. The immediate prognosis is good. In one or two years the child's gait is normal, and there does not seem to be anything left of the affection. But reexamination later, in the few cases in which several years have elapsed, shows characteristic changes in the hip. The epiphysis is flattened, and fits on the harder neck like a too large cap that rests on the ears; the acetabulum adapts itself to the deformity of the head, its cavity becoming deeper, its roof horizontal, and the pelvis resembles coxalgic pelvis. The joint was quite stiff in two of five cases ten and fourteen years later. In another case the gait is entirely normal thirteen years later.

Osteochondritis of the Hip Joint in Adults.—Tavernier refers to the condition left by osteochondritis in the upper end of the femur in childhood, with or without arthritis later. In a case reported by Rottenstein, the child of 8 began to limp nearly four years after successful correction of congenital dislocation of the left hip joint. Roentgenography confirmed the typical coxa plana, the *épiphyse en calotte*, as Calvé calls it. In a second case, there was a history of congenital partial luxation of the right hip joint, untreated. At the age of 6 coxa plana developed but subsided spontaneously under a few weeks' bed rest. There was no further trouble, except the old limp, until the age of 48, when chronic arthritis developed in that hip joint, with ankylosis. In a third case, coxa vara followed the coxa plana at the age of 10.

In Guibal's case the man stated that there had never been the slightest disturbance from either hip joint before the age of 17. Then the right leg seemed somewhat stiff for a year, but there was no pain or limping, and he served in the cavalry through the war. In 1920, at the age of 28, pains and difficulty in the use of the right leg were explained by roentgenographic findings suggesting the Legg-Calvé affection but differing from the latter by the fact of hypertrophy of the head of the femur. Guibal explains that the causal affection must have been in the epiphysial cartilage, instead of in the epiphysial center of ossification as in the true coxa plana.

Archives des Maladies du Cœur, Etc., Paris

June, 1922, **15**, No. 6

*Induced Dysfunction of Auriculoventricular Bundle. D. Daniélopolu and V. Danulesco.—p. 361.
Retrograde Conductivity. D. Daniélopolu and V. Danulesco.—p. 365.
*Auscultation of Heart Sounds. M. Philippson.—p. 375.
Significance of T Wave of Electrocardiogram. C. Pezzi.—p. 378.

Induced Disturbance in Conduction in Auriculoventricular Bundle.—The conducting function of this bundle was rendered abnormal in one healthy person by irritation of the vagus. The vagus was irritated by pressure on the eyeball, with or without preceding injection of atropin or epinephrin. The test was constantly negative in other healthy persons examined. Latent disease of one of the branches of the auriculoventricular bundle is readily revealed by this means, but it is exceptional to obtain a positive response in the healthy.

Auscultation of Heart Sounds.—Philippson expatiates on the instructive information to be obtained with the cardiophone amplifier. He describes it with illustrations.

Archives Médicales Belges, Liége

June, 1922, **75**, No. 6

Psychology and Physiology from Army Standpoint. Houdment.—p. 497.
The Wassermann Reaction. A. Dulière.—p. 510.
*Experimental Septicemia. E. Delcourt-Bernard.—p. 520.

Elimination Under Peptone of Non-Virulent Microbes Injected in the Blood.—Delcourt-Bernard recalls that nonvirulent micro-organisms injected into the blood stream are rapidly eliminated as they collect in the capillaries where

they are promptly incorporated by the phagocytes. He reports tests with dogs in this line, injecting nonvirulent micro-organisms and then injecting peptone. The shock produced by the peptone materially retarded this destruction of the micro-organisms and rendered it irregular and imperfect. He gives nine tables showing the details of the experiments and the findings every few minutes for one or two hours.

Bulletin de l'Académie de Médecine, Paris

July 4, 1922, **87**, No. 27

Necessity for Early Correction of Anomalies of the Prepuce in Infants. Rousseau-Saint-Philippe.—p. 10.
Malaria as Occupational Disease. E. Sari.—p. 14.
*Avicenna's Views on Tuberculosis. Dinguizli.—p. 15.

Avicenna on Tuberculosis.—Dinguizli has been studying the works of this great Arabian physician of the tenth century. He taught the contagiousness and the possible curability of pulmonary tuberculosis.

Bulletins de la Société Médicale des Hôpitaux, Paris

June 9, 1922, **46**, No. 20

*Acute Glanders in Man. Couréménos and T. Kéchissoglou.—p. 898.
*Differential Diagnosis of Exophthalmic Goiter. M. Labbé et al.—p. 902.
*Venous Tension in Asystolia. M. Villaret et al.—p. 911.
Possible Cortical Anovesical Center. Paulian and Topa.—p. 915.
Gangrene of Fingers Associated with Secondary Syphilitic Lesions. G. Guillain and C. Kudelski.—p. 917.

Acute Glanders in Man.—In the second of the two cases described the patient was a physician who had operated on the first case without gloves. The incubation period was only a few hours. The symptoms during the first week in both were merely those common to any grave general infection. The revealing phlegmon in the neck and the abscess in the popliteal region did not develop until the eighth and ninth days. The anthrax bacillus was cultivated from the blood about the fourteenth day. Both died in less than three weeks. The first patient was entirely covered with pustules, like a smallpox case.

The Basal Metabolism in Exophthalmic Goiter.—Labbé and his co-workers relate that their experience with eight cases of typical exophthalmic goiter, eleven with the incomplete clinical picture and seven of simple goiter, has confirmed the statements of the Americans in this line. Exophthalmic goiter seems to consist of two superposed sets of symptoms: those from hyperthyroidism, revealed by the exaggeration of the basal metabolism and the test hyperglycemia, and those from sympatheticotonia, revealed by the tachycardia, the exophthalmos, hot flashes, vasomotor disturbances, sweats, attacks of diarrhea and pigmentation—all of which can be realized in animals by irritation of the cervical sympathetic nerve. The association of the thyroid syndrome and the sympatheticotonic syndrome is easily understood on considering the physiologic relations between the thyroid and the sympathetic system. Each may act on the other, and set up a vicious circle, but each of the two syndromes can develop alone, as they show by some cases reported. In three of their cases tuberculosis seemed to be the primary factor. Labbé examines the basal metabolism by means of a war gas mask, with Tissot valve, spirometer and Laulanié's eudiometer. This combination, he says, allows greater precision than the Haldane apparatus. The hyperglycemia is tested with the Bang method.

Venous Tension in Asystolia.—The venous blood pressure was always found high in twenty-two cases of asystolia. The peripheral venous pressure begins to rise in the earliest stages of asystolia, and this may give the clue. The fluctuations in the pressure throw light on the effect of drugs and other measures and aid in the prognosis.

Encéphale, Paris

July, 1922, **17**, No. 7

Postencephalitis Bradykinesis. H. Verger and A. Hesnard.—p. 409.
Mental Sequelae of Epidemic Encephalitis. F. Naville.—p. 423. Conc'n.
Brain Disease in Relation to Precocious Puberty. K. H. Krabbe.—p. 437. Cont'n.
Senile Debility and Dementia. J. Vinchon.—p. 445.
The Balance Between Biologic Phenomena. H. and E. Biancani.—p. 449.

Journal d'Urologie, Paris

June, 1922, **13**, No. 6

Radiography of Urethral Strictures. H. Béclère and R. Henry.—p. 417.
*Resection for Hydronephrosis. R. H. Kummer.—p. 425.
*Cancer in Exstrophy of the Bladder. R. Dupont.—p. 433.
*Treatment of Gonorrhea. J. Janet.—p. 445.

Resection for Abnormal Vessel Responsible for Hydronephrosis.—Kummer's three cases confirm the advantage of removing the abnormal vessel, and only this. In all this group the pains subsided after the resection, and the kidney voided its contents more and more normally. He has found records of other cases in the literature bringing the total to fifty-six, and there was nothing to suggest necrosis of the kidney in any instance after the abdominal vessel had been severed. In three cases nephrectomy had to be done later as the kidney was found too much damaged to be left.

Cancer in Exstrophy of the Bladder.—Dupont's patient had worn an iron receptacle to collect the urine, and the cancer developed at the age of 38. He decided to exclude the rectum and make an artificial anus, and then excise the cancer and implant the ureters in the excluded rectum, but the man succumbed to intercurrent erysipelas and pneumonia. He has found twelve cases on record of cancer in exstrophy of the bladder, and only one died of the four given radical operative treatment but the ultimate outcome is not known in the others. These epitheliomas are slow growing and promise well for surgical treatment.

Local Treatment of Gonorrheal Urethritis.—Janet advises to refrain from exploring Morgagni's lacuna until the findings indicate that it is probably infected, the droplet of thick pus returning every day with gonococci numerous and lively as if they had escaped the action of the local measures. The urine of the first glass is clear, showing that the infection is localized. If there are filaments in the urine, they are free from gonococci. These three signs are presumptive evidence that the gonococci are lurking in the depths of the lacuna, and that more vigorous disinfection is required here.

Paris Médical

June 17, 1922, **12**, No. 24

Gynecology in 1922. L. Houdard.—p. 497.
*Necrobiosis of Uterine Fibromas. P. Bégouin.—p. 503.
*Tuberculosis of Female Genitals. E. Forgue.—p. 506.
*Radium Treatment of Cancer of Uterine Cervix. Richard.—p. 511.
*Drainage After Abdominal Hysterectomy. A. Schwartz.—p. 517.

Necrosis of Uterine Fibromas.—Bégouin remarks that the diagnosis is generally certain when pain, sudden increase in the size and the softening of the fibroma, with fever and malaise, develop in a case of uterine fibroma. The only affections which might be mistaken for it call for a laparotomy likewise, so that an exact differential diagnosis is not imperative. Whenever acute disturbances in the lower abdomen develop in a woman known to have a fibroma, this aseptic gangrene should be suspected, and the uterus should be removed at once, he says, without further delay. If there is a viable fetus, cesarean section should precede the hysterectomy.

Ascending Tuberculosis of Female Genital Organs.—Forgue insists that tuberculous metritis is more common than generally recognized. It escapes detection unless the scrapings of the uterus are examined for it. The infection is usually descending, but in a case described the metritis was evidently primary and the tubes were affected only secondarily. The lesions grew less and less pronounced and of more recent development from below upward. Among the other arguments in favor of the possibility of ascending infection are that the adnexa on both sides are so often affected, and that the ovary is very seldom attacked alone.

Radium Treatment of Cancer of Uterine Cervix.—Richard's review of recent literature on this subject extols the progress that has been realized. Many patients have been given at least the illusion of a cure who in other days would have been regarded as beyond all hope of relief. We might even conclude, he says, that the malignant disease had been cured if we did not know of the liability to recurrence after several years of a clinical cure. We must wait now for time to tell

which of the methods that have been applied give the best results. It may prove that the best ultimate results have been realized with methods that did not give the most encouraging immediate results. He warns against any active measures when there is cachexia, as the reaction to the irradiation is more than such persons can stand. Another contraindication is invasion of the bladder or rectum, and cystoscopy and rectoscopy are indispensable to exclude this. Extensive invasion of the vagina is a further contraindication, as also invasion of the lumbar glands. This may be suspected if there is much persisting pain in the lumbar region.

Drainage After Abdominal Hysterectomy with Suppuration in the Pelvis.—Schwartz recalls that different conditions compel different methods for drainage. Since January, 1920, in his 26 operations of the kind he sutured without draining in 16; in 4 cases he drained through the vagina; in 3 he introduced drainage tubes through the abdominal wall, and in 3 cases, none of these methods being applicable, he used a Mikulicz drain. This latter method has numerous drawbacks; it entails adhesions and leaves a weakened wall. But in exceptional cases it may be the only technic that can be used, and the patients may owe their lives to it, as in these cases.

Presse Médicale, Paris

July 5, 1922, **30**, No. 53

*Status Epilepticus. E. Toulouse and L. Marchand.—p. 565.
*Transfusion of Citrated Blood. H. M. Béraud.—p. 568.

July 12, 1922, **30**, No. 55

Trench **Fever**. Sir Wilmot Herringham.—p. 589.

Status Epilepticus.—Toulouse and Marchand relate that one of their patients died the sixteenth hour after the onset of the status epilepticus. The temperature had run up to 40.2 C. In another, death occurred the tenth hour. One of their patients had 364 seizures in twenty-four hours, but Dodds counted 472 in thirty hours in one case. The status epilepticus is generally brought on by suspension of the bromid or other sedative, or by nonobservance of the restriction of salt, which is equivalent to reduction of the bromids. For each additional seizure a supplementary dose of 1 gm. of the bromid should be given, and a dose of 0.5 gm. for an attack of dizziness. Half of these doses are enough if on a salt-poor diet. The twenty-four hour total of 10 gm. (on ordinary diet) or 5 gm. (on a salt-free diet) should not be surpassed. When this supplementary amount is no longer needed, it should be stopped only slowly, dropping it by 1 gm. a day. Since this prophylactic method has been applied at Villejuif, there have been only 18 patients who had as many as from eleven to twenty seizures during the day, and none had more than this. When the status epilepticus is under way, they give 6 or 8 gm. of bromid during the first day, fractioned, about 1 gm. every three hours during the first two days if the condition continues; the third day, at four hour intervals, and the fifth day, at five. The bromid is gaged by the number of seizures, not by the general condition. They warn in conclusion that bromin poisoning is liable to occur after any regular vigorous bromid medication. The temperature may run up high and the weakness may resemble that of status epilepticus, but the dilatation and immobility of the pupils are more pronounced in bromin poisoning.

Transfusion of Citrated Blood.—Béraud describes a three-syringe method, with at least two assistants. The blood is infused in small amounts, the syringes holding only 20 c.c. each, repeating the injections with minimal intervals.

Schweizer Archiv f. Neurol. u. Psychiatrie, Zurich

1922, **10**, No. 2

*Radiation from the Human Body. S. Alrutz.—p. 163. Cont'd.
Clinical and Anatomic Study of Apraxia. R. Brun.—p. 185. Conc'n.
*Atrophy of Muscle After Severing of Tendon. A. Audova.—p. 211.
Tremor and Asthenia of Mental Origin in Soldier. R. Benon.—p. 225.
The Striatal Syndrome. O. Binswanger.—p. 230.
The Biology of Instincts. C. v. Monakow.—p. 240. Conc'n.
Myelinization in Cortex. G. Hirako.—p. 275.
Diffuse Reactional Formation of Glioma. J. L. Pines.—p. 289.

Radiation from the Human Body.—Alrutz describes what he calls a new kind of radiation from the human organism. He presents it as a contribution to the study of hypnosis. The article is illustrated and to be continued.

Muscular Atrophy After Cutting of a Tendon.—Audova has been studying the course and the length of time required for atrophy to develop.

Schweizerische medizinische Wochenschrift, Basel

June 15, 1922, **52**, No. 24

Clinical Analysis of Striatal Affections; Two Cases. O. Binswanger.—p. 601.
*Actinomycosis. B. Galli-Valerio.—p. 607.
*Metastatic Streptococcus Peritonitis. E. Ruppanner.—p. 610.
*The Blood at High Altitudes. H. C. Frenkel-Tissot.—p. 613. Conc'n No. 25, p. 635.

Actinomycosis.—Galli-Valerio declares that the diagnosis of actinomycosis is extremely simple and easy if one only thinks of it. He has seen many cases that had been mistaken for pulmonary tuberculosis. Some had been subjected to various useless operative measures before, under potassium iodid, the whole melted away. In one case a cancer of the jaw had been diagnosed. He protests decidedly against the views of Klinger and others that the actinomyces is a normal parasite of the mouth. A case of proved contagion has never been known, he says, in medical or veterinary literature.

Metastatic Peritonitis.—In the four cases of fatal peritonitis described by Ruppanner, nothing was found in the abdomen to explain the peritonitis, but the streptococcus was cultivated in pure cultures. In two of the cases the primary affection had been erysipelas; in the others, follicular tonsillitis. Metastatic peritonitis has been reported most frequently with tonsillitis. In an epidemic of sore throat at Helsingfors, in eighteen cases of acute diffuse peritonitis, it was traced to the tonsillitis in fourteen. The rarity of metastatic peritonitis in acute infectious diseases otherwise is remarkable; only one or two instances are known with scarlet fever, diphtheria or scurvy. The streptococcus or pneumococcus has been found almost exclusively. In one case he found the appendicitis and the peritonitis to be the work of the Friedländer bacillus. The course of a metastatic streptococcus peritonitis is like that with puerperal fever. The patients are generally young, and the profuse persisting diarrhea, leukocytosis and albuminuria are generally followed by death in a few days. As there is no abdominal focus, there is no reason for operating.

The Blood at High Altitudes.—The biochemical and biophysical relations between the erythrocytes and the albumin elements of the blood at high altitudes are discussed as studied on large numbers of the young and old. This method of studying the elements of the blood has revealed, it is stated, a number of new processes in the physiology and pathology of the blood in the mountain climate.

Annali Italiani di Chirurgia, Naples

May 30, 1922, **1**, No. 2-3

*Tenodesis for the Knee. R. Dalla Vedova.—p. 113.
*Natural Cure of Cancer. D. B. Roncali.—p. 121. Cont'd.
*Arteriovenous Aneurysms. G. Pascale.—p. 144.
Comparative Pathology of Tumors in Plants and Animals. G. Pianese.—p. 171.
*Tendon Transplants for Radial Paralysis. L. de Gaetano.—p. 182.
*Arteries of the Stomach. L. Torraca.—p. 224.
*To Cover Defect After Mammectomy. F. Cinquemani.—p. 246.
Abnormal Direction of the Appendix. M. Battaglia.—p. 252.
*Pyloroplasty. M. Pavone.—p. 255.

Tenodesis of the Knee.—Dalla Vedova has corrected flaccid paralysis of the knee in three cases by turning the patella over on its longitudinal axis, freeing it of all soft parts. The region of the femur exactly corresponding to the new position of the patella, with the leg extended, is freed from soft parts in the same way. The joint is then immobilized in extension in plaster for at least two months, and then in a splint for four or six months longer. The synostosis between the femur and the patella and the tenodesis of the quadriceps thus insure the solidity of the joint, while the growth of the femur later is not interfered with, as the synostosis is above the level of the epiphysial cartilage. This is his reasoning, but his operations are too recent to determine the actual outcome in practice. This method was suggested by a case in which an

inflammatory process had spontaneously soldered the patella to the femur in this way. By prying the patella loose, the function of the joint was restored. Saxl has recently reported six cases in which he fastened the tendon of the quadriceps to the anterior surface of the shaft of the femur, but Dalla Vedova thinks that his method of accomplishing the same effect by patella-femoral trochlea synostosis is easier and more logical.

Natural or Spontaneous Cure of Cancers.—Roncali analyzes twenty-one cases that have been published by Nitze, Crosbie, Laurie-Watson, Czerny and others as the spontaneous cure of a malignant epithelial or connective tissue tumor without operative or other measures or only a partial operation. His analysis shows that none of the instances related can stand criticism.

Arteriovenous Aneurysm in Carotid Artery.—Pulsating exophthalmos from the large aneurysm, involving the internal carotid artery and the sinus cavernosus, was completely cured by Pascale. Ligation of the artery failed to relieve and he then removed the sac completely and ligated the ophthalmic vein, putting an end to all disturbances. This case was published in 1915, and the man has had no return since. The aneurysm had developed after a bullet wound of the ear. The case is illustrated, and also a second case in which the same operation was done and was a technical success, but the causal fracture of the skull had induced irreparable lesions and the young man succumbed to cerebral complications from them. Necropsy confirmed that the extirpation of the sac of the aneurysm and ligation of the vein had been the logical treatment.

Correction of Radial Paralysis.—De Gaetano's illustrations show the complete success in two cases realized by tendon transplantation by his technic. He compares his method with those of others and extols its advantages. He works through three incisions, one in the middle third of the forearm, the others on the dorsal and palmar aspect of the wrist. Besides transplanting the tendons, he shortens the extensor pollicis longus by taking up and suturing a fold in it, through the dorsal incision. Then through the palmar incision, the tendons are drawn up and fastened to the extensors, shortening them if necessary. He remarks in conclusion that the intelligent cooperation of the patient is important in training the muscles to adapt them to this new function. Hence he advises against attempting tendon transplantation in imbeciles.

Nourishing Value of the Arteries of the Stomach.—Torraca concludes from his experimental ligation of the different arteries of the stomach that any one of the arteries reaching the stomach from the left side (in dogs) is capable of supplying alone ample nourishment for the stomach. This cannot be said of the arteries reaching the organ from the right side. Shutting off the majority is followed by hemorrhages and necrosis in the superficial layers of the mucosa, and sometimes ulceration which tends to rapid healing.

To Close Defect After Mammectomy.—Cinquemani illustrates Parlavecchio's method for mammectomy which has several advantages over others. A semicircular incision from the upper arm to the sternum is connected in the center by a nearly vertical incision with the oval incision outlining the breast. The skin can be turned back to allow ample access to the axilla, and after the operation the skin can be stretched to adapt itself remarkably to the defect left. No secondary operation is needed to obtain the covering skin flaps. The linear scar forms an S. The method has proved extremely satisfactory from every point of view in large numbers of cases.

Present Status of Pyloroplasty.—Pavone's comparative analysis of the different methods in vogue for shutting off the pylorus concludes by commending the tying off of the pylorus with tape as the simplest and safest. The lumen is completely closed while the constriction is no tighter than necessary, and the vitality of the tissues is not compromised. This is the method introduced by Parlavecchio of Palermo, and he has applied it sometimes to exclude considerably more of the stomach than the mere pylorus region. In one case he thus shut off nearly the entire right half of the organ. He uses cotton tape 1.5 cm. wide.

Archivio di Scienze Mediche Coloniali, Tripoli

May, 1922, **3**, No. 5

*Myiasis in Tripolitania. R. Onorato.—p. 69. Cont'n.

Myiasis in Tripolitania.—Onorato here summarizes his experiences in cases Nos. 42 to 65 of his long series. The maggots had invaded a focus of osteomyelitis, a compound fracture, an arthritis with fistula, a lupus patch, a crushing injury of a limb, otitis media or noma in the group of Arabs here analyzed. All ages are represented. In one case he removed three of the larvae from the tympanic cavity and eustachian tube.

Policlinico, Rome

June 19, 1922, **29**, No. 25

Prevalence of Tuberculosis in Rural Districts. **A. Furno.**—p. 805. Conc'n No. 26, p. 843.
Pregnancy in Tube with Chronic Gonococcus Infection. S. Lussana. —p. 813.
Myomectomy in Gravid Uterus; Two Cases. L. Fioravanti.—p. 815.
Park Treatment of Pneumonia. L. Grossi and A. Rivara.—p. 819.

June 26, 1922, **29**, No. 26

*Test for Bilirubin in Blood. G. Sabatini.—p. 837.

Test for Bilirubin.—Sabatini criticizes the various tests in vogue and says that one he proposes is free from the objections of others, while it does not take more than 0.5 c.c. of blood serum for the test. Distilled water is added to 12 c.c of hydrochloric acid to bring the total of fluid to 100 c.c. In a graduated tube containing 30 c.c. of this fluid, 0.5 c.c. of a 1 per cent. solution of sodium nitrite is dropped in, from a pipet. The tube is agitated, and 0.3 or 0.4 c.c. of this reagent is added to 1 or 1.5 c.c. of the fluid to be examined, blood serum or an alkaline aqueous solution of bilirubin. The positive response is a brilliant green tint which slowly fades out again. The intensity of the tint is proportional to the bilirubin content. In his 200 applications of the test the findings paralleled or were more sensitive than those with the best of other methods, including Hijmans van den Bergh's.

Riforma Medica, Naples

June 12, 1922, **38**, No. 24

Pathogenesis of Bright's Disease. U. Parodi.—p. 553.
*Colored Butter Test Meal. E. Ruggeri.—p. 557.
*Vaccination Against Tuberculosis. P. de Tommasi.—p. 558.
Electric Treatment of Kidney Tumors. E. Mancini.—p. 559.
Resection of the Esophagus. E. Aievoli.—p. 560.

Colored Butter Test Meal.—Ruggeri describes how he mixes Sudan III with 20 gm. of butter, and has this taken on bread or in coffee or in cachets, as a test meal in cases of jaundice to aid in differentiating the cause of the jaundice. The Sudan III stain has an affinity for neutral fats, and the stained butter passes through the stomach unmodified but is emulsified by the bile, and the pancreatic juice splits it and forms soaps with it. This strips the stain coating from the droplets of butter, and it is voided as a precipitate in the stools without staining them. With retention of bile from a lesion of the pancreas, the stained butter passes unmodified through the entire digestive tract and the stain is pronounced. With retention of bile, but normal pancreas functioning, the stool shows no stain, the findings being the same as in physiologic conditions.

Vaccination Against Tuberculosis.—De Tommasi vaccinated eighteen young persons by the Maragliano method, all with positive skin tuberculin reaction, and suspicious of tuberculosis. He then applied the skin tuberculin test at regular intervals up to seventy-five days. In all but four the skin tuberculin test veered to negative thereafter. He accepts this as convincing evidence that the vaccination had induced production of antibodies.

Rivista di Clinica Pediatrica, Florence

April 30, 1922, **20**, No. 4

*Chorea. Gennaro Fiore.—p. 193.
*Paralysis Following Diphtheria. G. Berghinz.—p. 227.

Pathogenesis of Chorea.—Fiore reports the necropsy findings in a case of Sydenham's chorea in a boy of 5 who had had articular rheumatism and endocarditis but no other important infection. The necropsy findings were identical

also in a second case, in a girl of 9. The chorea had developed in this case after a fright, from seeing her seat-mate in convulsions. This case was also pure chorea at first. In both there was a disseminated miliary encephalitis, most pronounced in the optic thalamus and motor zone of the cortex. The cerebellum seemed to be sound. He adds that before the age of 6 the cerebral sensory tracts, the optic thalamus and the motor zone are scarcely differentiated enough to induce chorea; after 15 they are settled and their functions balanced. This explains the age limits of chorea. The encephalitis responsible for it is specific more by its seat, its entity and its distribution than by its nature, although acute rheumatism is the most frequent cause.

Postdiphtheric Paralysis.—Berghinz encountered last year a number of cases of paralysis following diphtheria. They were grouped in foci to such an extent as to suggest some special factor predisposing to paralysis. This factor, he asserts, is inadequate antitoxin treatment. In environments where the disease is recognized promptly and treated vigorously no instances of polyneuritis were known. He describes seven very grave cases; two of the children died the day after they reached the hospital, and another succumbed to intercurrent bronchitis, but the others, very grave cases, terminated in recovery.

Rivista Critica di Clinica Medica, Florence

April 25, 1922, **23**, No. 12

*Treatment of Scleroderma. G. Tognini.—p. 133.

Fibrolysin in Treatment of Scleroderma and Dupuytren's Contraction.—Tognini emphasizes the patience and perseverance required for this treatment. The drug seemed entirely harmless. The benefit was most pronounced the more recent the onset of the affection. Decided improvement was evident in all but one of his eight cases of scleroderma and four of Dupuytren's contraction. He injected 2 or 3 c.c. of a 10 per cent. solution of the fibrolysin, two or four times a week. He reviews the whole field of thiosinamin treatment in recent years, commenting that in very few of the published cases had time enough elapsed for a decisive judgment.

Brazil-Medico, Rio de Janeiro

May 13, 1922, **1**, No. 19

*The Gates-Papacosta Serologic Test. A. E. de Arêa Leão.—p. 239.
*Modern Treatment of Burns. Arnaldo de Moraes.—p. 242.

Serologic Tests.—In nearly 500 parallel tests of the Wassermann reaction and the formaldehyd gelification test, introduced by Gates and Papacosta, there was concordance in 55.86 per cent., but in 160 instances the Wassermann was positive while the other was negative, and in 58 with negative Wassermann the other was positive. The findings thus conflicted in nearly 45 per cent.

Treatment of Burns.—De Moraes reports very favorable experiences with film treatment of burns. He used a mixture of equal parts of paraffin and petroleum, melting at 40 C., with a few drops of an antiseptic.

Gaceta Médica de Caracas, Venezuela

Jan. 15, 1922, **29**, No. 1

*Induced Anaphylaxis to Alcohol. E. Freytes Pineda.—p. 2.
Obstetrics from Racial Standpoint. A. L. Briceño Rossi.—p. 6.
Chloroform Anesthesia in the Tropics. B. Perdomo Hurtado.—p. 7.
Pebble in Ear for Fifty Years. E. Conde Flores.—p. 11.
Syphilitic Chancre in Ear. E. Conde Flores.—p. 11.

April 15, 1922, **29**, No. 7

Treatment of Leprosy.—p. 79.
Bradycardia in Infectious Diseases. L. Razetti.—p. 80.
Artificial Pneumothorax. A. Larralde.—p. 82.
Tuberculosis in Venezuela. C. E. Salom.—p. 85.
Treatment of Morphin Addiction. L. Pérez Carreño.—p. 87.
The First Major Operations in Venezuela. D. Ponce Córdova.—p. 88.

Induced Anaphylaxis to Alcohol.—Freytes Pineda suggests that means to induce anaphylaxis may prove useful in prophylaxis and in treatment of abuse of alcohol. As the serum of an animal or person with anaphylaxis may confer anaphylaxis when injected into others of the same species, it might thus be possible to confer anaphylaxis to alcohol by the serum of horses in which anaphylaxis had been induced by systematic preliminary treatment. He has had no opportunity to realize this suggestion in practice. Some experiments with sheep were inconclusive, as the animals succumbed to intercurrent infection. He has attacked the problem in another way, seeking to induce reactional phenomena on ingestion of the alcohol. He experimented with the native drink, cocuy, made from the American agave, reasoning that by mixing certain substances with the cocuy it might be possible to stimulate the nonspecific production of defensive reactions. These, in addition to those engendered by the alcohol itself, might result in the formation of antibodies which would entail intolerance to alcohol. His mixture for the purpose contains 2 gm. of fluidextract of ipecac and 6 gm. of beef gall to 300 gm. of cocuy, and a little asafetida. This mixture induced intense drunkeness and, in at least 60 per cent. of the more than 200 cases thus treated, in the course of four weeks the reaction anaphylaxis was pronounced, with invincible repugnance to the odor and taste of the cocuy. He thinks that this method of *asociación mutualista de reacciones anafilácticas* might be used in treatment of morphin addiction, nicotism, etc. The anaphylaxis to cocuy has persisted in three of his cases for ten and twelve years to date. The more intense the previous abuse of alcohol, the more readily this reactional anaphylaxis was induced.

Prensa Médica Argentina, Buenos Aires

June 20, 1922, **9**, No. 2

*Delivery with Flat Pelvis. J. B. González.—p. 49.
*Precordial Pulsation with Pericarditis. F. C. Arrillaga.—p. 56.
Fracture of Transverse Process of Lumbar Vertebra. Tagliavacche.—p. 58.
Early Neurosyphilis. Nonne.—p. 68. Cont'n.

Delivery with Flat Pelvis.—González' illustrations show the protrusion of the fetal skull as it adapts itself to a flat pelvis with double promontory. This protruding portion may be mistaken for the fetal chin or elbow, unless the characteristic hardness is noted and its absolute immovability, or the fact that it can be moved only as part of the head. The ovoid shape is also suggestive.

Precordial Pulse Beat with Pericarditis.—We have been taught that when there is more or less effusion in the pericardium, the precordial pulsation can no longer be distinguished, but this was not the case in the girl of 16 whose case is reported. Necropsy confirmed that adhesions had induced anomalous conditions and these were responsible for the precordial pulsation. In case of doubt, puncture is so harmless that it should be given a trial.

Revista de la Asoc. Méd. Argentina, Buenos Aires

January to April, 1922, **35**, No. 207-210

*Cysticercus in Man. S. Mazza and O. Ivanissevich.—p. 7.
*Bacteriophagia. Cesar E. Pico.—p. 12. Idem. A. Bachmann and L. I. Aquino.—p. 18.
Autoserotherapy of Serum Sickness. Cesar E. Pico.—p. 24.
*Influence of Carbohydrates on Glycemia. M. Casteigts.—p. 28.
Influence on the Skin of Frogs of Pituitary and Brain Lesions. L. Giusti and B. A. Houssay.—p. 42.
*Cause of Death from Burns. R. A. Vaccarezza.—p. 48.
*Fracture of Semilunar Cartilage. Bosch Arana and E. Dowling.—p. 57.
*Sensory Visceral Reflexes. F. C. Arrillaga.—p. 63.
*Arthroplasty for Poncet Rheumatism. C. I. Allende.—p. 73.
*Fracture of Surgical Neck of Humerus. H. de Cusatis.—p. 81.
Scientific Work of Dr. E. Lorentz. J. Arce.—p. 89.
Prophylaxis of Tuberculosis in Children. A. Casaubon.—p. 96.
Tuberculosis Dispensary at La Plata. M. E. Jerez.—p. 111.
Mothers' Home. D. Iracta.—p. 118.

Cysticercus Cellulosa in Man.—In the case described, the tumor was in the masseter muscle and was shelled out whole. No instance of tenia solium was known in the family. This is the eighth case published in Argentina. The others were in the orbit or brain or there were multiple tumors, up to 160 accessible tumors in one case.

Nature of Bacteriophagia.—A similar report of Pico's research on the Twort-d'Herelle phenomenon was summarized recently, June 3, p. 1765. He rejects the hypothesis of a filtrable virus as responsible for the transmissible bacteriolysis, as this assumption does not explain all the phenomena observed. He explains the bacteriophagia as a special instance of autocatalysis, and this may be instigated by a number of influences. Bachmann and Aquino have been testing snake venom, bile, etc. Their conclusions are against the assumption of an infection as responsible for the bacteriolysis.

Influence of Certain Carbohydrates on Sugar Content of Blood.—Casteigts charts the repeated findings in six diabetics and in six normal subjects. They show that the rise in the sugar content of the blood reached the highest point in about an hour in both groups, but it was far more pronounced in the diabetic. The hyperglycemia was lowest after ingestion of oatmeal and much higher with rice. In one diabetic, for example, after ingestion of 75 gm. of glucose the blood sugar rose from 1.24 to 2.12 in one hour and by the third hour was 0.88. After ingestion of oatmeal, the corresponding figures were 1.18, 1.37, 0.90 and 1. With rice, they were 1.04, 1.60 and 0.98. The physiologic sugar content of the blood averaged in the six normal subjects 0.5 to 1 gm. per cent. (Folin and Wu).

Cause of Death from Burns.—Vaccarezza reports the results of experiments on twenty-three dogs, with corresponding controls, which confirm the identity of the clinical picture resulting from mortified tissues, whether the injury entailing the mortification was from extreme heat or cold, the action of caustics, contusions, or the electric current. The clinical manifestations from all these are the same as from traumatic shock of any kind, and the only salvation when the mortified area is extensive, is by early and ample excision of the mortified tissues. The fact that the blood is the vehicle for the toxic element was demonstrated by two experiments in which the paw of a dog was burned and then the femoral artery in that limb was flushed with saline until the fluid pouring from the femoral vein was clear. Then the femoral artery was sutured to the central stump of the carotid artery in a second dog, B, and the femoral vein of A with jugular vein of B. In this way the burned limb was irrigated solely with the blood from B, none getting into the general blood stream of A. In both experiments the dog B died while dog A survived.

Fracture of Semilunar Cartilage of Knee.—The fine results are extolled of complete removal of the portion torn off from the meniscus by the longitudinal fracture.

Sensory Visceral Reflexes.—Arrillaga refers to reflexes for which some chronic visceral lesion is responsible. One young woman, for example, presented neuralgia of the eleventh dorsal nerve with an intensely tender point at the McBurney point; lightly pinching a fold in the abdominal wall caused pain in the appendix region and also along a line between the axillary line from the costal arch to the ilium. He attributes the sensory reflex to some torpid lesion in the right ovary, and proposes to treat the girl of 18 with ovarian extract plus treatment of her inherited syphilis. If this does not cure, he will block the nerve with alcohol. In a similar case in a woman of 47, his presumptive diagnosis was confirmed by the transient cure from injection of procain to deaden this eleventh dorsal nerve. Appendicectomy in both these cases had had no influence on the neuralgia. When appendicitis is responsible for the sensory reflex, the pains are more paroxysmal, while with a lesion in the adnexa they are persisting, and there may be exacerbation during the menstrual periods. With lesions in the urinary apparatus there may be similar neuralgia of the eleventh dorsal, but it usually extends to the first lumbar, and the urine clears up the diagnosis. The prostate may also induce this eleventh dorsal neuralgia, but it is usually bilateral in this case. With chronic lesions of the testicle, the tender points are generally lower. There is a specially tender point, with the eleventh dorsal neuralgia, in the next to the last intercostal space close to the spine. Further testimony to the neuralgia character of the pain is its disappearance after injection of a little procain at any of the tender points.

Ankylosis from Poncet Rheumatism of Both Knees.—Allende reports satisfactory results from arthroplasty in the young man.

Fracture of Surgical Neck of Humerus.—Cusatis relates that there were recently at one time in the service three children with this fracture. Two healed under reduction and extension, but in the third case the boy was 16, and these measures were supplemented by two nails driven to cross in the depth of the bone. This insures such solid fixation that passive movements can be begun the second or third day. It is rarely possible to suture the bone in these cases, and the nail treatment is simple and certain, and a great relief for the patient.

Siglo Médico, Madrid

April 15, 1922, **69**, No. 3566

Puerperal Pyemia. F. Villanueva.—p. 393.
Physiology of the Sense of Smell. A. Martin Calderin.—p. 395. Conc'n.
Bismuth in Treatment of Neurosyphilis. J. Marin Agramunt.—p. 397.

April 29, 1922, **69**, No. 3568

*Cajal. His Work and His School. C. M. Cortezo.—p. 449.
*Iodin Fumes in Treatment of Dacryocystitis. Pedraja.—p. 453.
*Pain in Diagnosis. R. Alvarez Salazar.—p. 453.
*Protein Therapy. M. Marin Amat.—p. 456.
*Endocrinology. G. Marañón y Posadillo and G. Pittaluga.—p. 459.
*Sanitation and Hygienization of Spain. L. Muñoz Antuñano.—p. 462. Cont'n.

Cajal.—This is another instalment of Cortezo's comprehensive study of Ramon y Cajal, his personality, his work and his school. It was begun in No. 3567, p. 421.

Iodin Fumes in Treatment of Dacryocystitis.—Pedraja reports satisfactory results from this treatment of phlegmonous dacryocystitis, filling the cavity of the sac with the fumes, after curetting. He refrains from applying fluid, and merely dabs the wound dry with gauze and then applies the iodin fumes.

Pain in Diagnosis and Guide to Operation.—Alvarez Salazar cites some specific cases in this continuation of his article, begun in No. 3567, p. 424.

Protein Therapy.—Marin Amat gives the details of his extensive experience in this line in treatment of the eyes and in general treatment. The article was begun in No. 3563, p. 309, and the conclusion is reached in No. 3573, p. 600.

Present Status of Endrocrinology.—This is the reception address presented by Marañon on admission to the National Academy of Medicine, and Pittaluga's reply thereto. The publication began in No. 3562, p. 283, and the concluding instalment has not yet been reached.

Hygienization of Spain.—Muñoz Antuñano's article is continued. The beginning instalment was in the *Siglo* for Dec. 3, 1921, p. 1176.

Deutsche medizinische Wochenschrift, Berlin

June 16, 1922, **48**, No. 24

Digitalis Substances and Digitalis Medicaments. Straub.—p. 791.
Effect of Mercuric Chlorid and Trypaflavine on Bacteria and Body Cells. Hahn and Remy.—p. 793.
Lipoid-Splitting Function of Lymphocytes. Aschoff and Kamiya.—p. 794.
Further Simplification of My Turbidity Reaction. H. Dold.—p. 797.
Appendicitis and Gonorrhea as the Two Most Common Causes of Chronic Salpingitis and Ovaritis. A. Mueller.—p. 798.
Intestinal Rupture Due to Patient's Attempt to Reduce an Incarcerated Hernia. F. Schmidt.—p. 800.
Primary Pulmonary Actinomycosis. Lichterfeld.—p. 801.
Procain Injuries. A. Decker.—p. 802.
Unusual Locations for Syphilitic Chancres. Müller.—p. 803.
By-Effects of Neo-Arsphenamin and How to Prevent Them; with Special Reference to Epinephrin. H. Reinhard-Eichelbaum.—p. 804.
Arsphenamin in Surgery of Septic Wounds. Geyer.—p. 806.
Affections of the Rectum. G. Ledderhose.—p. 807.

Münchener medizinische Wochenschrift, Munich

June 16, 1922, **69**, No. 24

Disturbances of Epiphysial Nutrition in Man. Axhausen.—p. 881.
*Eclampsia in Infants. Gött and Wildbrett.—p. 884.
Hecht's Modification of Wassermann Test. W. Loele.—p. 885.
Source of Material for Plastic Operations. J. F. S. Esser.—p. 888.
Treatment of Pleural Empyema. R. Kerbsch.—p. 888.
Caffein Preceding Arsphenamin Treatment of Neurosyphilis. Sack.—p. 889.
Medical Aid in Selection of Trade. T. Fürst.—p. 890.
Rare Case of Tumor of Appendix. Rauenbusch.—p. 891.
Paroxysms of Rectal Spasm. A. Japha.—p. 892.
Table of Purin Equivalents in Food. M. Schirmer.—p. 892.
Notions and Theories of Inflammation. O. Lubarsch.—p. 893.

Eclampsia in Infants.—The investigations of Gött and Wildbrett lead them to believe that only such infants with tetany as suffer, at the same time, from eclampsia are likely to become epileptics, for true tetany has no points of contact with genuine epilepsy, but eclampsia and epilepsy have a common familial origin, being closely related to spasmophilia.

Zentralblatt für Chirurgie, Leipzig

April 29, 1922, **49**, No. 17

*Low Tracheotomy in Membranous Croup. E. Seifert.—p. 585.
Primary Arthroplasty in Tuberculosis. J. Wieting.—p. 589.
"Experimental Studies on the Question, Whether Extirpation of the Suprarenals in Epilepsy is Justifiable." J. Fischer.—p. 591.

Low Tracheotomy in Membranous Croup.—Seifert holds that his experiences with low tracheotomy in membranous croup in children justify him in giving this method the preference—at least in hospital practice. With proper technic and adequate after-treatment, the disadvantages usually ascribed to low tracheotomy can be reduced to a really satisfactory minimum and the universally recognized advantages of the method can be thus brought out. He reports on 139 patients, thirty-three of whom died, giving a mortality of 23.7 per cent., which he asserts has seldom been surpassed. The main advantage of low tracheotomy is that the cannula may be more easily removed and earlier than in high tracheotomy. A second advantage is that there is no danger of injuring the cricoid cartilage and the vocal cords. The cannula in case of the 103 living children could be removed, on the average, in 3.6 days.

Zentralblatt für Gynäkologie, Leipzig

April 29, 1922, **46**, No. 17

Experiences with Paracaeral Anesthesia. F. Burgkhardt.—p. 642.
Tendencies in Constitutional Pathology; Significance of the Toxonoses of Pregnancy. A. Greil.—p. 648.
Rare Brow Presentation with Fetal Occiput Over the Sacral Promontory. A. Hermstein.—p. 655.
Hypnosis in Obstetrics and Gynecology. R. Falk.—p. 658.
*Treatment of Prolapse of Uterus. D. Maluschew.—p. 661.
*Protection of Perineum in Left-Side Posture. K. Heil.—p. 663.
*Roentgen Ray in Vomiting of Pregnancy. M. Fraenkel.—p. 664.

Operative Procedure for Treatment of Marked Prolapse of the Uterus.—Maluschew's procedure is a modification of the Baldy-Frank fixation method. It enables one to shorten the round ligaments by way of the vagina. Posterior colpoceliotomy furnishes the only rational way of attacking the round ligaments through the vagina. Such a procedure offers special advantages in that, after the celiotomy incision is made, an ample shortening of the Douglas folds and, at the same time, an indirect levator suture can be easily undertaken. As to the technic of the operation, he first makes a circular incision around the portio vaginalis, while the vaginal wall round about, for a breadth of 2 cm., at the most, is separated by blunt dissection. The bladder is not brought into view. Colpoceliotomy follows. He carries the incision to the perineum. Hereupon the corpus uteri is brought into the field so that the posterior wall presents. At this point, the round ligaments can be drawn with Kocher forceps through the broad ligaments, just as well as in the Baldy procedure, by way of the abdomen. He grasps the round ligaments some distance from the cornu uteri in order to get sufficiently long loops. The round ligaments are held by an assistant. Before the uterus is replaced, a few sutures are taken in the upper end of the celiotomy incision; otherwise the cervix, which is drawn up by the round ligaments, may slip into the abdominal cavity and cause trouble when the celiotomy wound comes to be closed. The uterus is now drawn downward, and the two Kocher forceps are slowly withdrawn. The loops of the round ligaments present at the sides of the portio and can easily be united with a few sutures and fastened to the surface of the portio. They can then be completely covered by suturing the narrow vaginal flap over them. The celiotomy incision is closed by grasping with large needles in a wide circle the uterosacral ligaments and the levatores ani. In some instances perineoplasty and an anterior colporrhaphy may be required. If incontinence of the urine should persist, a pyramidalis fascioplasty after the Goebell-Stoeckel method may be done in the usual manner. The operation can be applied without hesitation to aged women.

In Defense of the Left-Side Posture in Protection of the Perineum.—Heil opposes Abernetty's contention (Cf. abstract in THE JOURNAL, Dec. 10, 1921, p. 1934) that the lateral posture does not permit careful observation of the fetal heart sounds, and emphasizes that protection of the perineum in the left-side posture deserves, on account of offering a much better survey of what is taking place, the preference before perineal protection in the dorsal posture. He explains that the objections raised by Abernetty to the lateral posture will be eliminated if the proper technic is employed, the main point being that the patient must not be allowed to assume too soon the lateral position—not when the fetal head first engages in the superior strait but only when it has advanced to the point that it does not recede to any extent during the interval between labor pains.

Roentgen Irradiation in Pernicious Vomiting of Pregnancy.—Fraenkel reports excellent results from roentgen irradiation in four cases of hyperemesis gravidarum. He gave two applications to the stomach region of half of an erythema dose of hard, filtered rays, with an interval of five days. The action was so prompt and so effective that he could not be certain whether the irradiation actually relieved the irritation or whether suggestion, connected with the use of the apparatus, played an important part.

Hospitalstidende, Copenhagen

May 31, 1922, **65**, No. 19

Traumatic Spinal Cord Disease with Unusual Course; Two Cases. A. V. Neel.—p. 301. Conc'n.
*Marks on Fetal Skull from Pressure. P. Zachariae.—p. 310.

Marks of Pressure on Fetal Skull.—Zachariae gives an illustration of the two grooves parallel with the sagittal suture. The scalp was discolored and partly gangrenous in these grooves but the bone was not indented, and the child has developed normally. Labor had been very long and difficult, but a previous childbirth had been normal.

Svenska Läkaresällskapets Handlingar, Stockholm

June 30, 1922, **48**, No. 2. Gullstrand Number

*Simultaneous Tests for Refraction and Visual Acuity. Allvar Gullstrand.—p. 53.
*Keratoconus with Pulsation in Cornea. Idem.—p. 103.
*Case of Lenticonus Posterior. Idem.—p. 119.

Allvar Gullstrand.—The medal presented to Professor Gullstrand on his sixtieth birthday by the Swedish Medical Association is reproduced, and the list of his works is given. A German translation of his long article on the simultaneous determination of refraction and visual acuity opens this issue of the *Handlingar*. A German translation is given also of his report of a case of keratoconus with pulsation in the cornea. Both were previously published in Swedish journals, as also the third article, "A Case of Posterior Lenticonus." Gullstrand was awarded the Nobel prize in medicine in 1911 for his contributions to ophthalmology, especially his lamp.

Ugeskrift for Læger, Copenhagen

June 8, 1922, **84**, No. 23

Simultaneous Arsphenamin and Mercury Intravenous Injection. H. Boas and B. Pontoppidan.—p. 645.
*The Steinach Rejuvenation Operation. K. Sand.—p. 650. Conc'n.

The Steinach Operation.—The first instalment of Sand's report of his fifteen cases was reviewed July 29, p. 418. He protests against the ill chosen term "rejuvenation" as applied to the Steinach operation, but he asserts that there can be no question as to its having an influence on the organism in the way of a stimulation, a regeneration or restitution. With this modest aim, we can perhaps render valuable aid to our patients. The vasoligation, as he calls it, is entirely harmless, and in premature senile conditions, in impotency and in conditions of depression it may improve some patients; no effect may be apparent in others, but in still others it may have a decidedly good influence. No benefit was derived in one syphilitic, and in one patient with profound depression for several years, both in the group of senile conditions, and two patients were only transiently benefited. But the six others in this group showed remarkable improvement, physically, mentally and in some sexually. In the four cases of impotency and depression, a positive result was evident in all from the unilateral vasoligation. One man, after impotency and depression for years, recovered and married and is happy in his married life. The interval since has been from three to eighteen months in all his cases. Sand's extensive experimental and clinical experience in this line has been reviewed as published. His operation differs from Steinach's, as was mentioned on page 418. He calls his operation epididymectomy or *vasoligatur*.